RUN WINDOWS ON A MAC—THE SMART WAY p. 66

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The Mac Experts

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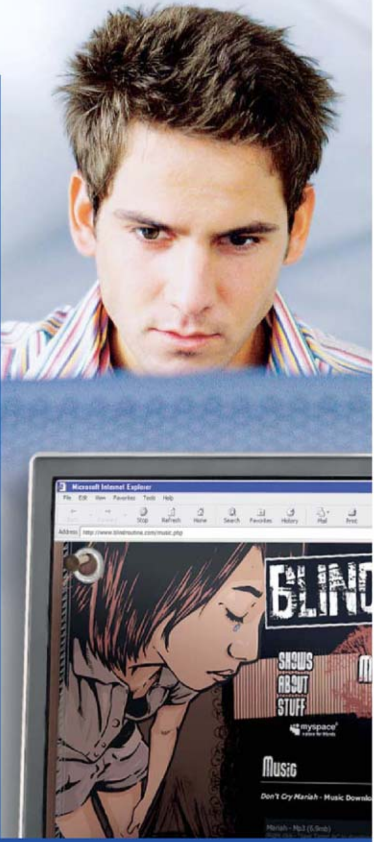

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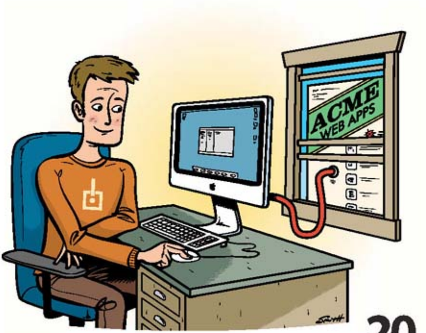

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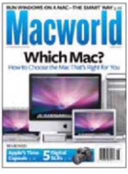
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MACWORLD.COM'S TOP 5

The top 5 stories on Macworld.com are:

1 **Apple iPhone Event—Live Update**
Jason Snell reports live from Cupertino as Apple unveils the iPhone SDK (macworld.com/2786).

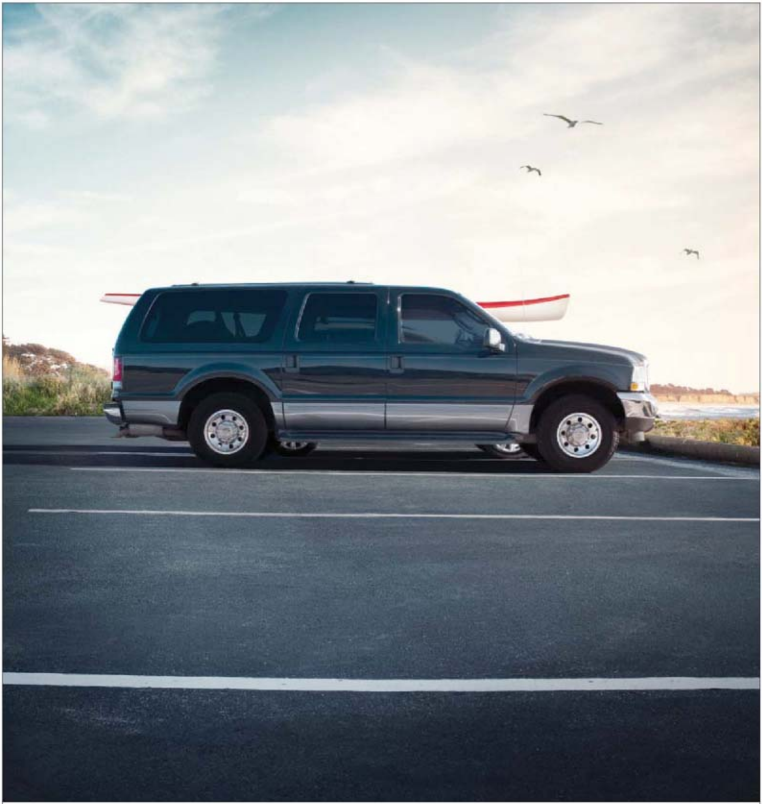
2 **Review—MacBook Pro Core 2 Duo/2.4GHz and 2.5GHz**
Penryn processor delivers fleet performance for new MacBook Pro models (macworld.com/2787).

3 **25 Native iPhone Apps We Hope to See**
On the eve of the iPhone SDK release, our editors compile a wish list for developers (macworld.com/2788).

4 **Review: Safari 3.0.4**
Our review finds a solid, streamlined browser whose latest version has new powers (macworld.com/2789).

5 **'App Store' Will Distribute iPhone Software**
Apple will control iPhone software via a new program called App Store (macworld.com/2790).

(Ranking valid as of March 31, 2008.)



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FROM THE EDITOR'S DESK By Jason Snell

The $2,500 Solution

How the old rules of buying a Mac have changed

There was something odd about the first few Macs I bought: though each one was more technologically advanced than the one before, they all seemed to cost about the same.

That first Mac, an SE I bought on sale at the UC San Diego campus bookstore in the spring of 1990 (mere months before the Mac Classic replaced it), was a bargain at just under $2,500.

In November of 1992 I was back for my second Mac, this one a PowerBook 160. By buying it at UC Berkeley's student computer store, I managed to eke out a slight discount off its $2,430 retail price.

Three years later and living through the heady days of the Mac clone era, I bought my first (and as it turned out, only) non-Apple Mac: a Power Computing PowerWave. Unlike the Apple systems I had previously bought, this one was built to my specifications. I filled out my order form; chose my RAM, hard drive, and other configurations; and calculated the grand total: just under $2,500.

Four years later, the song remained the same—I purchased a Power Mac G4 for the low, low price of . . . $2,499.

But recently, my $2,500 rule has changed—along with a few other Mac-buying rules.

Power at the Low End

When the low-cost iMac and iBook were first introduced, Mac power users turned up their noses at them for being underpowered and unexpandable.

Then a funny thing happened: During Apple's transition to Intel processors, those so-called low-end Macs ended up with a whole lot of power—dual-core processors, fast expansion slots, and support for large external monitors—but remained affordable. Even a generously configured 24-inch 2.4GHz Intel Core 2 Duo iMac barely breaks $2,000 on Apple's online store. Same goes for the 1.8GHz MacBook Air I'm using to write this column.

PHOTOGRAPH BY PETER BELANGER

Each Mac I bought was more advanced than the one before, but they all cost about the same.

True, I could get that price up to $2,500 if I really wanted to hit the magic number. (Apple's RAM prices can do that job in a hurry.) But my point is, I don't need to. My old rule of thumb—the professional-level Mac I really need will always cost about $2,500—has gone by the wayside.

As this month's cover story, "The New Rules for Buying a Mac" (page 56), shows, a lot of the old rules don't apply. Whether you've been buying Macs for years or you're a switcher buying a Mac for the first time, we hope this article will give you some good advice on what to consider when it's time to buy a new Mac. The rules may be different now, but that change is good news: unless you've got some extremely specific, high-end needs, Macs are more affordable now than they've ever been before.

No Windows PC Required

Another way things have changed: When I started at *MacUser* back in 1993, Windows was not a popular topic in Mac magazines. I do recall that in 1995 we ginned up a "Windows 95: So What?" cover.

Despite such bravado, things in the Mac world then were bad and getting worse. By the time I started at *Macworld* in 1997, one of the first feature stories I worked on was "Save Your Mac!," a guide to finding ways to keep your IT department from ripping your Mac out of your hands and replacing it with a Windows PC. The story was accompanied by an illustration of Mac users escaping from a sinking ship, clutching their keyboards like life preservers.

Today, covering Windows in *Macworld* isn't such a big deal, because—thanks to those Intel processors—running Windows on your Mac is now easy and convenient.

Of course, Mac users generally don't want to run Windows per se. What they want to do is use a tool such as Parallels Desktop or VMware Fusion to run Windows *programs*, with Windows itself tucked away out of sight as much as possible. That's why my favorite part of our feature story, "Best of Both Worlds" (page 66), is our list of cool Windows programs that you might be interested in running. Of course, everyone will have their own reasons for running Windows—mine involves an unhealthy obsession with imaginary baseball games. The good news is, if you must lead a cross-platform life, you don't need to buy a PC to do it.

In fact, I suppose you could even qualify that as yet another new rule about buying a Mac: if you're a PC user, save your money and stop buying PCs. And I'm pretty sure that's a sentiment that just about every Mac user can get behind.

Editorial Director **Jason Snell** would love to hear from you. Send him an e-mail at jason_snell@macworld.com. Or join the discussion at forums.macworld.com.

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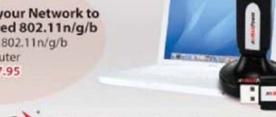

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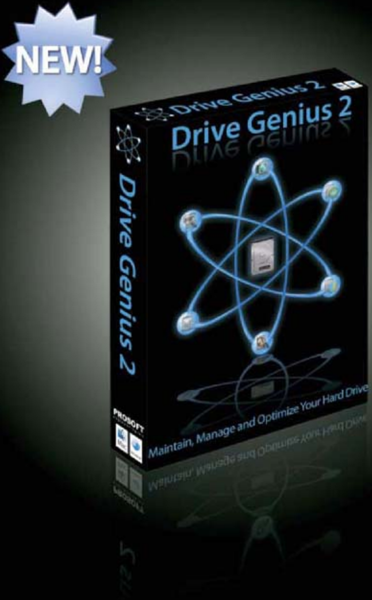
Seeing too many beach balls lately?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The Thinnest Laptop

Readers weigh in on the MacBook Air, the Apple TV, and more

To Air Is Human

I tried out the new MacBook Air ("Thin Air," March 2008) today and decided I'm not ready for it. It is well built, is a nice weight, and has good features. Unfortunately, when I go on the road I always take a Kensington mouse. I also work with photo CDs and DVDs, and record live programs, using Griffin's iMic via USB. With the Macbook Air, I am a port and a drive short for all that. I suppose I could carry extra outboard drives, but if I'm going to do that, I might as well buy a conventional laptop. The system won't weigh any more than the Air once all the components are in the bag!

✉ **Bruce Smith**

BACK UP BETTER WITH TIME MACHINE
Macworld
MacBook Air
Apple Unveils the Thinnest Laptop Ever
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PLUS
iTunes Movie Rentals
The All-New Apple TV
Updated iPhone, iPod Touch

I am underwhelmed by the MacBook Air. Road warriors, of which I am one, never asked for a laptop with this form factor. What we wanted was a revival of the 12-inch PowerBook, but with an Intel processor. The PowerBook was actually smaller than the new laptop—about the same size as a sheet of typewriter paper—and only a quarter-inch thicker than the MacBook Air at its thickest part. The 12-inch PowerBook had a full complement of ports—including USB and FireWire—and much greater memory and drive capacity. It even had a replaceable battery. All it needed was a bit more speed.

✉ **Lawrence Zeitlin**

OVERHEARD ON THE FORUMS

The original design for [Yahtzee on the] iPhone and iPod touch used the accelerometer to give a realistic dice-rolling experience. But without a Wii-style wrist strap, the lawyers wouldn't let them publish it.

RichardBronosky
macworld.com/3423

The Apple TV should exploit the possibilities of having a constant connection to the Internet. Take a simple cue from the Squeezebox, and provide basic RSS feeds during the screen-saver mode. This device is more than just a big iPod.

Chesterdad
macworld.com/3422

In response to your coverage of the MacBook Air in the March 2008 issue, you are the minority. You may be tech-savvy, but the rest of us are average or below-average computer users. We use only two to three programs, along with the Internet. For us there are no sacrifices in using an Air—it's the perfect fit all around.

✉ **Helen Sandoval**

The feature compromises that Apple made to reduce the size and weight of the MacBook Air are fine with me, as I rarely use FireWire, the SuperDrive, or Ethernet when I am on-the-go. With the MacBook Air I can now really travel light. As for the noninterchangeable battery, I think Apple had to design it that way to save weight and reduce case thickness. Four or five hours of battery life is good enough for me 99 percent of the time.

✉ **Edward Ho**

Apple TV: Tune In?

I would hope that Apple and the studios would consider giving us more than 24 hours to watch a movie ("Apple Introduces iTunes Movie Rentals," *Mac Beat*, March 2008). I am a Netflix member, and sometimes we keep our DVDs as long as a week before returning them. Even the video store would allow us a few days to view the movie before late charges took effect. Let's be fair about this. Not all of us are pirates—just people living busy lives.

✉ **Gary Duerr**

It's a shame that I have this killer brand-new 160GB Apple TV but still have to go to my local video store to get the movies I want. After perusing the entire iTunes movie and TV-episode selection, I get the feeling

PHOTOGRAPHS BY PETER BELANGER

that the studios and networks are just testing the waters by baiting customers with a few hot titles, and then filling the rest of the library with mediocre stuff.

🗨 **Via the Macworld.com forums**

I like the new Apple TV's reduced price and the direct operation of movie rentals. However, it would be nice if Apple added a keyboard port so that user inputs could happen quicker.

✉ **Paul Davis**

Everything Hard Drive

I was disappointed to see that your review of large, Time Machine–capable external hard drives ("Huge Hard Drives," March 2008) did not include any products from LaCie. I purchased a LaCie Big Disk Extreme+ drive (macworld.com/3444) about a month ago and have been extremely pleased with it. It has 1TB of capacity and spins at 7,200 rpm. It has USB 2.0 and FireWire 400 ports, and two FireWire 800 ports on the back of the unit for expanded connectivity. It's ready to go for Time Machine out of the box. Best of all, I purchased it for under $330, which makes it far less expensive than any of the 1TB drives you reviewed.

✉ **Matt England**

Our hard-drive roundup focused on large-capacity single-drive external units. The LaCie Big Disk Extreme+ is not a single-drive unit; it has a pair of drives configured as a RAID 0. At the time of our testing, LaCie did not have an external drive that matched our criteria.—Roman Loyola

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Many thanks for your timely (pun intended) review of large drives for use with Time Machine. Your recommendation of the Western Digital My Book Studio Edition is right on. I originally bought a LaCie d2 Quadra that worked for exactly four hours before dying a peaceful death, with all of my data on it. I replaced it with the Western Digital My Book, which has worked flawlessly.

✉ **Chase Libbey**

In your review of hard drives specifically for use with Time Machine, there is no mention anywhere of the Time Capsule. This is frustrating for those of us who are trying to decide whether to buy a standard backup drive or the Time Capsule.

✉ **Robert C. George, M.D.**

Unfortunately, the Time Capsule had not started shipping when we assembled that review. But we review it in this issue (see page 44).—Jackie Dove

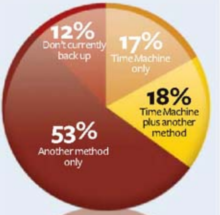
I have been trying to find the G-Drive Q 500GB hard drive you recommend in the March issue's *Top Products*. It has been impossible to find it (or any of the other G-Drive products) at the numerous Web vendors I have checked. Even if you go to G-Technology's own Web site, you will be hard-pressed to find a product that is in stock. Is G-Tech being sold or going under? What's the situation?

✉ **Tim Presnell**

Although G-Tech was recently acquired by Fabrik, the G-drive and other products are still available on G-Tech's Web site (g-technology.com). The site was temporarily out of some G-Drive products but has since restocked.—James Galbraith

READER POLL

How do you currently back up your Mac?



Source: Karlin Associates, February 2008

Lyric Blues

I appreciated your article "Sing Along with Your iPod" (*Playlist*, March 2008). But I wonder why Apple hasn't implemented a nicer way to view lyrics. I can't view them in Front Row or on the Apple TV. I can see them in iTunes if I pull up an information window, but then I can't control iTunes until I close the window. What if I want to change the song's current playing position and see the lyrics at the same time? Apple lets me have lyrics with my music, but doesn't let me do anything with them once they're there.

✉ **Joshua Price**

Incompatible Printer

Based on your four-mouse (🖱🖱🖱🖱) review (*Top Products*, March 2008), I bought a Lexmark X500N printer to work with my MacBook Pro running OS X 10.5.2 (Leopard). Unfortunately, after I set it up, I found out from Lexmark that there is no printer driver for Leopard although Lexmark is "working on one." Why would a printer get a four-mouse rating if it works only with Tiger?

✉ **Yvonne Bowers**

Our full review of the Lexmark X500N appeared online in September 2007, before Leopard's release. Unfortunately, we can't retest every product for compatibility with new versions of OS X, as we must return the vendors' products in a timely manner.—Brian Chen

Mac Beat

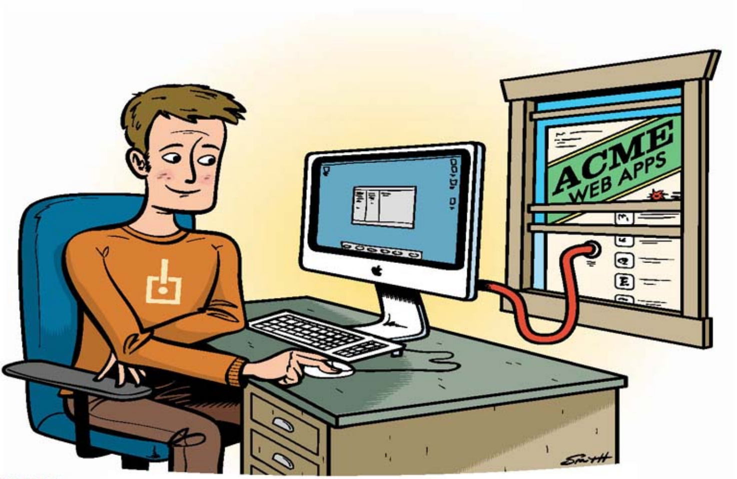


ILLUSTRATION BY TYSON SMITH

SOFTWARE

Web-Based Programs Making Headway

But don't expect them to replace desktop software soon **BY JIM DALRYMPLE**

You may have heard a lot lately about the benefits of using Web-based applications instead of traditional hard-drive–based versions: you don't have to install (and, in many cases, buy) any software, you can access the programs from anywhere that you have an Internet connection and a Web browser, you can easily collaborate with groups, and more. Yet none of the Web-based programs have really taken off in the mass market.

Adobe's recent entry into the online photography market, with Photoshop Express (see "Adobe Launches Photoshop Express" on page 22 for more information), brings a big-name business to the Web services market, but the move is unlikely to make much more of a splash than Google's online word processing foray did.

"To some extent, [Photoshop Express] was somewhat of a defensive move [for Adobe]," says Jeffrey Hammond, a senior analyst at technology research company Forrester Research. "It throws up a barrier that prevents Adobe's market share from eroding from under them."

Although Adobe Photoshop certainly won't see its market share eroded to a significant degree by today's online photo services, consumers are undeniably moving to social networking sites and blogs to share their photos. That gives Adobe a chance to extend its brand to consumers who are drawn to those types of sites. In fact, Photoshop Express already lets users connect to Facebook, Photobucket, and Picasa.

Photography-based Web programs such as Picnik (www.picnik.com) and Pixenate (pixenate.com) have not rendered their desktop rivals obsolete and probably won't for the foreseeable future.

There isn't as much functionality in these Web programs as in their desktop counterparts, says Michael Gartenberg, vice president and research director for market research firm JupiterResearch. "However, it is an opportunity to give something away to get people using [those companies'] products."

For Adobe, which offers a wide variety of software, having more people using one of its products can be a good thing. As a consumer, if your experience with a company is positive, you are probably more likely to upgrade within that company's product line (sometimes known as a halo effect).

You don't have to install Web-based software, and you can use it anywhere you have an Internet connection.

As such, Gartenberg doesn't see the move to Web programs as a trend, but more as an example of the "connected and disconnected state of the way we work." In other words, Web software is less likely to displace standard software than it is to complement it.

Office Software on the Web

Besides Adobe, Google is probably the best-known company to have gone for the Web services market in a big way, with its suite of Microsoft Office–like applications.

Google says that it has millions of active users for its Google Apps, which consists of Google Docs (a word processor, spreadsheet, and presentation package), Gmail, Google Calendar, and Google Talk instant messenger.

Despite Google's hefty package, Gartenberg says that he hasn't seen Google Docs make a dent in Microsoft Office sales.

According to a recent study by research firm NPD Group, only 2.3 percent of Americans use Google Apps on a regular basis. And of those, only 0.5 percent use them to replace Office.

Ross Rubin, director of analysis at NPD, points to many of the features that make Web apps appealing to users. The fact that these programs are lightweight and cross-platform, and offer users the ability to start a document in one location and finish it in another without having to worry about moving the file between computers, are all seen as huge benefits. Collaboration with coworkers and friends is another big benefit of online programs.

The big drawback to Web-based software, however, is the Web itself—that is, the fact that you need to be online to use it. In an office or home environment, that's probably not a big deal. But if you're working while on the road, for example, the lack of Internet connectivity can be a deal breaker. Google has begun to address this issue by adding the ability to view and edit word processing documents and to view (but not edit) spreadsheets offline. Google Docs' third component, a program for making slide presentations, for now lacks offline access. However, Google has plans to extend the offline access to it.

"Offline access of [hosted] apps is the next step in making the Web as a whole a lot more reliable," says Ken Norton, Google Docs product manager.

Google accomplishes offline access with the Gears browser plug-in, which can store files and data locally, as well as run JavaScript applications without a server connection. Work done offline will be automatically synchronized with the Google Docs servers when a user connects to the Internet later.

"The design goal is to create a seamless experience, with or without an Internet connection," says Norton.

Offline access to documents is "one of the big things [Google needs] to be competitive in the enterprise," says Rebecca Wettemann, vice president of research at technology information provider Nucleus Research. "It's a critical step in gaining that appeal."

Whatever the future holds for Web programs, there's little worry that their development will cause companies to stop making desktop equivalents any time soon. ☒

Jim Dalrymple is the news director of Macworld.com. **Juan Carlos Perez** contributed to this story.

NEWS IN BRIEF

Aperture 2.1 Update

Less than two months after releasing Aperture 2.0, Apple unveiled a 2.1 update to its professional photography workflow program. The new version includes an open plug-in architecture that will allow photographers to use third-party imaging software in Aperture. Aperture 2.1 includes the Apple-developed plug-in Dodge & Burn, which adds brush-based tools for dodge (lighten), burn (darken), contrast, sharpen, saturation, and blur effects. With the update, you can now also flip images horizontally or vertically and customize your own set of adjustments. The update also improves other functions, including importing, Quick Preview, All Projects view, image adjustments, books, printing, and exporting.

Apple Tops Brandchannel.com Lists

The awards just keep piling up for Apple. The company recently captured top spots in almost every category of Brandchannel.com's 2008 Brandjunkie Survey. Brandchannel surveyed almost 2,000 of its readers (74 percent of whom are in the marketing field) to determine the answers to long-standing scientific brainteasers such as the following: "Which brand would you like to have dinner with?"; "If you were any brand, which would you be?"; and "If you love that brand so much, why don't you marry it?" Apple snagged top honors in six of the ten categories, including these: "What brand is most likely to revolutionize the branding industry in the next five years?"; "What brand can you not live without?"; and "What brand, if sent back 100 years, would have the biggest impact on the course of history?" It wasn't all roses for the Cupertino company, though. Apple also grabbed second place (following Microsoft) for "Which brand do you want to argue with?" (Respondents commented: "Why must you introduce a 'new' product every 3 months?")

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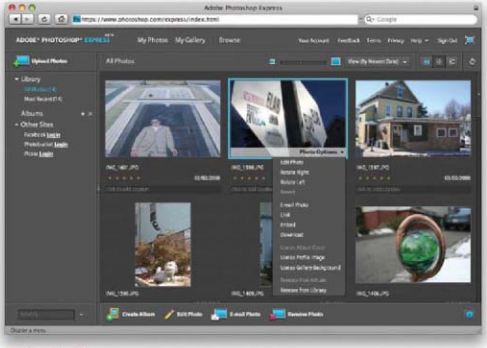
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Adobe Launches Photoshop Express

Web-based service caters to photo-sharing crowd

When I first started hearing whispers of an online version of Photoshop, I wondered if such an offering would be a good move for Adobe. But now that the company has drawn back the velvet curtain on the Adobe Photoshop Express public beta, I find myself intrigued by what it offers.

Photoshop Express is a Web-based program that people can use to upload, edit, store, and share their photos. The idea is one part Photoshop and one part Flickr, all tied together with a Flash bow. All you need is a Web browser that supports Adobe's Flash 9 technology. Adobe will give you 2GB of free storage space to upload your photos (or pull them down from other places—currently Facebook, Photobucket, and Picasa). You can then edit your pictures with the suite of nondestructive built-in tools, and share the results with other users either via Photoshop Express or by sending the photos back to the aforementioned sites.

I've briefly played around with the service, and while it seems pretty slick, the Flash overhead slows things down at times. Also, there are no printing options yet—the focus at the moment is on online photo sharing, though Adobe suggests that it will be working with third parties to offer printing services in the future.

Photoshop Express will remain free even after it's out of beta (sometime this year), but Adobe plans to add for-pay features in the next few months, including additional storage space and more photo-editing features and effects.—**DAN MOREN**

PRODUCT WATCH

HARDWARE

TriBand Antenna for Time Capsule, from QuickerTek (www.quickertek.com): Upgrade to Apple's network backup device adds three external 3dBi antennas for boosting Time Capsule's wireless coverage (self-installation kit, $130).

USB to DVI Graphics Adapter, from Gefen (www.gefen.com): Adapter lets Macs or PCs connect a DVI or VGA display, using a USB port instead of a conventional video port ($129).

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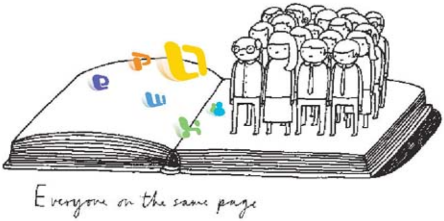
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OPERATING SYSTEM

OS X Turns VII

You've come a long way, kitty

A lot can change in just a few years. Take OS X, for example, which recently celebrated its seventh birthday.

OS X 10.0, code-named Cheetah, was the first ground-up overhaul of the Mac operating system since its introduction in 1984, and version 10.0 brought with it design changes that would shake the OS platform for years to come: Unix-based underpinnings, true preemptive multitasking, and, of course, the Aqua interface.

Consider this: when Apple released OS X in March 2001, Apple Stores didn't even exist yet; the first pair of retail outlets, in California and Virginia, didn't open their doors until two months later. Nobody lined up for 10.0's release, as they did for more recent versions such as Tiger and Leopard. The iPod was still in development and wouldn't be released until October of that year. The iPhone wasn't even a glimmer in Steve Jobs's eye.

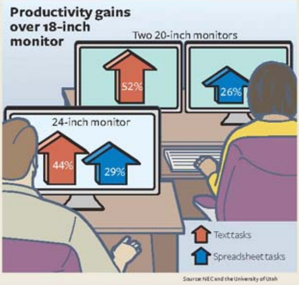
While the first version of OS X brought with it many improvements to *how* Mac OS worked, the niceties were often lacking; developing the OS was the computer equivalent of settling a new frontier. For example, 10.0 didn't let you watch DVDs or burn CDs, and the OS was buggy and—despite its speedy feline namesake—slow. To top it all off, existing Mac applications wouldn't run in OS X—except in the slower Classic emulation environment—until developers were able to port them over.

Nonnative applications are now a thing of the past, and OS X has become the truly modern operating system we were promised lo those many years ago. And with it, Apple's popularity has steadily risen. Though many might pin Apple's recent success—especially with Windows switchers—solely on the iPod, I argue that none of that would have been possible without OS X setting the stage.—**DAN MOREN**

TECH TRENDS

Big Screens, Big Payback

Turns out large monitors aren't just pretty looking. A new study finds that users of larger or multiple displays are significantly more productive. Researchers estimated productivity gains in both word processing and spreadsheet work that could deliver savings of $2.1 million per year for a typical 250-person company, even after accounting for the expense of buying the larger monitors.—MARYANN JONES THOMPSON



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HARDWARE

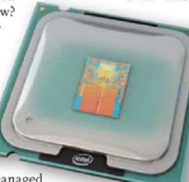
Intel's Open Book

Road maps offer clues to future Apple products

As positive as the Intel relationship has been for Apple, one aspect of that partnership must drive Steve Jobs absolutely bonkers: secrecy—or, more to the point, the lack of it.

In the pre-Intel days, when IBM and Freescale (née Motorola) provided the Mac's processors, Apple could tightly control what little, if any, information it provided about its products before their announcements; neither chip maker released road maps of its product lines that were anywhere near as detailed as Intel's.

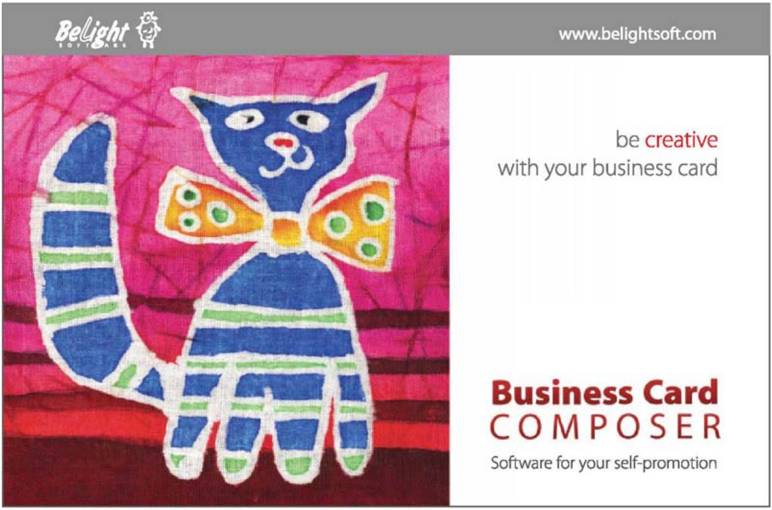
Intel, on the other hand, keeps its partners (and, by extension, the general public) well informed about its product plans years in advance. Although this openness insulates the entire PC ecology from expensive surprises, it can also both inflate customer expectations and delay purchases. After all, if you know that something better is just around the corner, why not hold off buying until tomorrow?



Tim Deal, a senior analyst at market research firm Pike & Fischer, says that Apple formerly was able to keep its product plans a closely guarded secret and that it "tightly managed and exploited this secrecy to create anticipation and drama around its new product releases."

But he believes that the new Intel-enforced openness is a good thing. "[Apple's] reliance on the not-so-secret Intel processor development cycle allows the market to get a glimpse of future processor incarnations for the Mac," says Deal. "This does not inhibit the company's ability to generate excitement about future product releases, nor does it preclude Apple's customary mystique and showmanship surrounding a given product release."

What's more, when Apple was tied to PowerPC processors, which had lower clock speeds than competing Intel chips, it struggled to explain the *megahertz myth*—the idea that a processor's clock speed was the defining factor in its efficiency. As Deal explains, "Consumers are now able to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compare Mac computers alongside PCs with greater effectiveness."

So what do Intel's latest announcements foreshadow for the Mac lineup? When Intel introduced its Core 2 Duo processor line, the first desktop processor out of the gate was code-named Conroe. This chip, however, never made it inside an Apple desktop computer. The iMac was instead built around what Intel referred to as a "mobile processor," code-named Merom.

Merom's successor, code-named Penryn, was recently added to the MacBook and MacBook Pro lines. But Intel promises it will release a quad-core Penryn later this year. Although this processor has a larger power appetite (or TDP, for Thermal Design Power), plenty of 17-inch MacBook Pro–using video editors would kill for those two extra cores when encoding on location, battery life be damned.

A quad-core iMac isn't out the question, either. But this talk of multiple cores begs the question of whether extra cores are worth the additional cost, the power they consume, and the extra heat they generate. Each core needs to be fed enough data and instructions to keep it humming along efficiently, and most programs these days aren't smart enough to take full advantage of multiple cores.

Intel is developing a pair of technologies to help the transition to the multicore world: SPT (Speculative Parallel Threading) will work to exploit all cores in real time, and TM (Transactional Memory) will ensure that the information threading its way through one core doesn't muck up the work done by another core. The real solution to multicore management, however, will be highly optimized software, and developing that will take some time.

If you know that something better is just around the corner, why not hold off buying until tomorrow?

What's more, multicore machines perform best when their storage systems can provide torrents of data to their processors. A Mac Pro can be tricked out with a fast internal RAID array; not so a single-drive quad-core iMac.

Despite these limitations, another pair of recently announced quad-core processors spark the imagination. The low-power quad-core 2.33GHz and 2.5GHz Xeon processors each have a TDP of a mere 50 watts, compared with 150 watts for the 3.2GHz Xeon available in the Mac Pro. And soon-to-be-released small dual-core Penryns will likely replace the Merom chips in the MacBook Air.

Apple might even offer a truly teeny laptop based on Intel's entirely new Atom line of ultralow-power Intel processors. But that's only conjecture.

And that's just the way Steve Jobs likes it.—**RIK MYSLEWSKI**

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GRAPHICS

Photoshop CS4 Won't Be 64-Bit on the Mac

Windows version to get improvement first

Adobe's flagship product, Photoshop, will become a 64-bit application in the next major revision to the company's bundle of creative pro applications, Creative Suite 4. However, the 64-bit version will be available only to Windows users—Adobe attributes this to a change Apple made at its Worldwide Developers Conference (WWDC) in 2007.

At WWDC, Apple discontinued its Carbon 64-bit program, which left companies such as Adobe without an avenue to make their current code base 64-bit. What Adobe has to do now is transition all of the old Photoshop code to Apple's native Cocoa programming language, where it can then be turned into 64-bit.

"If you want to go 64-bit on the Mac, you have to port to Cocoa, and that's not a trivial task," says John Nack, the senior product manager for Adobe Photoshop.

While Apple has been dabbling with 64-bit support in its hardware and software for the past several years, OS X 10.5 is the company's first 64-bit operating system. The move to 64-bit applications will mostly help those users who are working with huge amounts of memory (over 4GB).

However, with smaller, less memory-intensive files, you probably won't see a huge speed bump, according to Nack. Adobe said that you could expect an 8 to 12 percent performance increase with the smaller files.

ADOBE PHOTOSHOP CS3 EXTENDED

Adobe wouldn't give a time frame for the release of the 64-bit version of Photoshop or even on when users can expect CS4, but the company usually works on a cycle of 18 to 24 months in major product releases, and it released CS3 on March 27, 2007.—**JIM DALRYMPLE**

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INTERNET

Men Fall Harder for Online Fraud

Women typically lose less in Web-based scams

When it comes to being taken in by Internet fraudsters, it seems that men have a knack for losing cash. According to a new report from the Internet Crime Complaint Center (IC3), data compiled from more than 206,000 complaints received in 2007 shows that men lost $1.67 to every $1 lost by women in online fraud.

The IC3—a joint effort run by the FBI and the National White Collar Crime Center—is the clearinghouse for online crime complaints in the United States, and regulators and law enforcement use its database to get a picture of criminal trends and, in some cases, hunt down the criminals. The organization says that buying patterns and human nature play into the findings.

"Historically men were more apt to purchase large-ticket items like electronics . . . that could explain a lot of it," says John Kane, the IC3 research manager who wrote the report.

But with women now spending more online, the difference is also due to the fact that certain types of schemes seem to suck men in. "Men tend to fall victim to business investment schemes and some other schemes that have a higher dollar loss," Kane said.

Investment fraud complaints, where the average loss is more than $3,500, were overwhelmingly submitted by men, Kane said. Compare that to something like auction fraud, where both men and women are frequently victimized. The average loss there is just over $480.

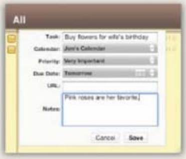
Men also tend to be the victims of check fraud (average loss: $3,000) and Nigerian letter fraud scams ($2,000), Kane said.

Overall, Internet crime is netting the bad guys more money than ever. Total losses from 2007 complaints came to $239 million, up $40 million from 2006. (Leading the list were the United States, the United Kingdom, and Nigeria.)—**ROBERT MCMILLAN**

WIDGET OF THE MONTH

DoBeDo 4.2

I'm somewhat ashamed to admit that I've just started using to-do items in Mail and iCal—but better late than never, right? And to get the most from to-dos, I've also started using Blue-Henley's free DoBeDo. The widget lets you not only view to-dos from one or many of your calendars, but also add new items—and in a much more intuitive way than either Mail or iCal does (www.bluehenley.com).—JONATHAN SEFF



Task: Buy flowers for wife's birthday
Calendar: Jim's Calendar
Priority: Very Important
Due Date: Tomorrow
URL:
Notes: Pink roses are her favorite.

NEWS IN BRIEF

Digital Music Sales Going Up

A recent report from market research firm In-Stat says that digital music sales will account for 40 percent of all music purchases worldwide by 2012. In 2007, digital sales accounted for 10 percent of the worldwide music market, up from 6 percent in 2006. In-Stat sees a couple of factors contributing to this growth, including the expansion of broadband Internet, demand for single-track downloads, and growing music catalogs. Full-track downloads to mobile phones will also be a factor in the next few years, the report says. Digital music is already a lucrative business, however. Sales for online digital music reached $3.05 billion in 2007, up 48 percent from 2006.

Adobe Media Player Released

With a shipping version of its Adobe Media Player software, Adobe has officially entered the online video space, offering not only software that rivals Apple's QuickTime and Microsoft's Windows Media Player, but also video content including episodes of *CSI: Miami* and *CSI: New York*, along with other feature programming and music videos. Announced about a year ago, the Media Player and content catalog is designed to be free for users, supported by paid advertising. Shows and videos will be available either via streaming or for download, depending on the content producer, and can be viewed online or offline accordingly. Based on Adobe's Flash technology, Adobe Media Player contains both content-creation and -playback components, and is available for Windows and Mac OS.

PRODUCT WATCH

SOFTWARE

Keynote Objects FX 2.0, from Jumsoft (www.jumsoft.com): Collection of 3-D images and photo objects can be used with Apple's Keynote and Pages ($39; upgrade, $19).

Outspring Mail, from Outspring (www.outspring.com): E-mail client boasts features that automate e-mail processing with an Intelligent Summary view for summarizing messages and a Message Deferment function ($95).

Peak Pro 6, from BIAS (www.bias-inc.com): Pro audio-editing software adds mastering and classical-editing cross-fade modes, new controls, and improvements to delivery tools ($599; contact BIAS for upgrade pricing).

Toast 9 Titanium, from Roxio (www.roxio.com): Disc-burning software adds TV-streaming capabilities, as well as the ability to burn high definition video to Blu-ray Disc and HD DVD via an optional add-on ($100; upgrade, $70).

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Hot Stuff

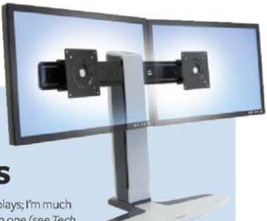
What we're raving about this month

ReQall

My To-Dos
Turn in story
Grocery shopping
do taxes
call folks

Keeping track of appointments and tasks is easy when you're at your Mac: just fire up iCal (or whatever program you use). But what about all those other times? Try QTech's reQall, a free service that lets you dial an 888 number and dictate personal reminders. You can add or recall items by phone, Web, IM (AIM or Yahoo), e-mail, RSS, or even a text message. If your reminder includes a word such as *buy*, reQall knows to add it to your shopping list; if the message includes a word such as *today*, it adds the item to your calendar. (It integrates with both iCal and Google calendars). The service still has a few bugs, though: it didn't always properly categorize items I added by phone, and it has yet to recognize me automatically just by the phone number from which I'm calling—I have to enter a personal identification number instead. Still, for keeping track of things that pop into your head when you're not at your Mac, reQall is a pretty nifty use of one of the oldest forms of technology (www.reqall.com).—**DAN MILLER**

Ergotron Multiple-Display Mounts

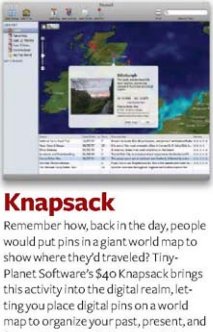


Like many Mac users, I'm a fan of multiple displays; I'm much more productive with two monitors than with one (see *Tech Trends* on page 24). Ergotron's $149 Neo-Flex Dual LCD Lift Stand offers a unique approach to mounting two displays. Instead of utilizing two separate bases, the Dual Lift Stand supports two displays on a single stand, letting you adjust the height of both displays simultaneously. The base of the stand rotates, and you can quickly switch each display between landscape and portrait mode—the displays can slide horizontally, allowing them to be flush against each other in either mode. (Note that Apple's recent LCDs require Apple's $29 VESA adapter to fit.) If you're a laptop user, the $179 Neo-Flex Combo Lift Stand offers similar functionality, but replaces one display mount with a laptop stand (www.ergotron.com).—**DAN FRAKES**

ExpanDrive

Integrated network support in OS X has always been a dicey proposition. While the Finder can handle FTP, it doesn't do so with particular aplomb. Most frustratingly, while you can copy files from an FTP share mounted in the Finder, you cannot write to that share: it's a one-way street. Magnetk's $29 ExpanDrive aims to obviate this problem by letting you mount secure FTP shares as local drives, accessible from any program, and fully readable and writable. ExpanDrive still needs some work, but it looks promising (www.magnetk.com).—**DAN MOREN**

Knapsack



Remember how, back in the day, people would put pins in a giant world map to show where they'd traveled? Tiny-Planet Software's $40 Knapsack brings this activity into the digital realm, letting you place digital pins on a world map to organize your past, present, and future journeys. Clicking on a pin lets you view postcards from that location, and clicking on a postcard brings up the location in Google Maps. The Leopard-only Knapsack, which bills itself as a "personal travel organizer," also maintains travel itineraries, as well as activities and checklists, and simplifies planning for your trip. Say good-bye to the days of hauling your map, itineraries, and film canisters on your back while traveling (tinyplanetsoftware.com).—**DAVID DAHLQUIST**

Surveillance Saver

So it turns out that there are a bunch of $400 Web-enabled surveillance cameras out there from Axis that aren't password-protected by default. And someone had the brilliant idea to write a screen saver that uses Google to search for these cameras, and then connect to them in a random order, showing you strange slivers of live video from around the world. Using the free SurveillanceSaver, you can see the sleepy patrons of an all-night Internet café in Moscow, or watch some poor sucker shoveling snow in Utah (macworld.com/3494).—**JASON SNELL**

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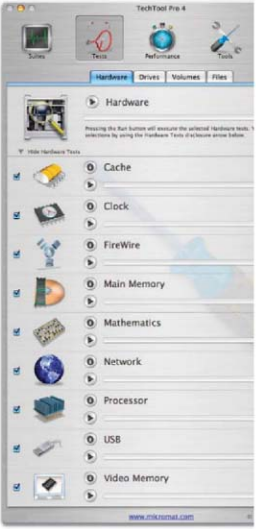
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Reviews

Canon EOS 40D and Nikon D300

PHOTOGRAPHY BY PETER BELANGER

Photo Opportunities

Feature-rich DSLRs put new power into the photographer's hands **BY BEN LONG**

A digital single-lens reflex (DSLR) camera is a great step up from a point-and-shoot camera; it gives you the option to change lenses, plus it offers improved image quality, a more functional viewfinder, better low-light performance, and more creative controls. But the DSLR market offers both sub-$1,000 entry-level and more-expensive mid-level DSLRs, leaving you with a mind-boggling decision to make.

The good news is that there really is a difference between a mid-level and an entry-level DSLR—it's not just marketing gobbledygook. We're going to explore those differences as we round up five of the newest midrange DSLRs on the streets today. Canon's EOS 40D, the latest in a long line of excellent Canon models, boasts more pixels and a bigger LCD than its predecessor, the EOS 30D (●●●●; macworld.com/1297), as well as important interface changes. Nikon's D300, an update to the popular D200 (●●●●; macworld.com/0916), offers much-improved high ISO performance (ISO describes a camera's sensitivity to light) and great new features for everyday shooting. With the E-3, Olympus introduces some design changes and performance improvements to its DSLR line. Panasonic's Lumix DMC-L10K has a completely different design from that of the company's previous DSLRs. And Sony's Alpha DSLR-A700 is a sturdy update to Sony's popular Alpha line.

A midrange DSLR offers better performance, sturdier construction, more features, and often better image quality than an entry-level DSLR does. If you want a camera that leaves you with room to grow as a photographer and that gives you more artistic latitude, then consider a midrange DSLR.

While there are many questions to consider when shopping for a DSLR, one of the things you don't have to worry about anymore is obsolescence. Yes, there will be a day—probably not too far away—when a DSLR offers more for the price you pay today. But the camera you buy now might be all the photographic power you need for years. The new features that appear in the future probably aren't going to make a big difference in image quality or in the way you shoot. These current cameras are worth serious consideration.

A Single Lens

A DSLR has only one lens. Some point-and-shoot cameras have two: the large lens that zooms in and out and actually takes the picture, and the small lens that you look through when you use the optical viewfinder (if the camera has one). With a DSLR, you look through the same lens that the camera uses to expose the image sensor. A single-lens system presents a more accurate view of what the camera will shoot. In a camera with a separate viewfinder, you can get a final image that's slightly offset from what you saw, plus you can't see the effects of any filters or lens attachments you might want to use.

DSLR viewfinders tend to be bigger and brighter than those of point-and-shoot cameras, so it's easier to see and compose a shot. On a DSLR viewfinder, a status display lets you check settings without having to take your eye away from the viewfinder, allowing you to shoot quickly.

Not all DSLR viewfinders are created equal. Those on midrange DSLRs such as the ones we reviewed are better than the ones found on typical entry-level DSLRs. They're larger and brighter, and on most of these cameras they display a comprehensive status readout, including ISO. The Lumix DMC-L10K and the Alpha DSLR-A700 don't include an ISO display and generally have less-informative in-viewfinder readouts. Overall, in terms of brightness and size, the DMC-L10K had the weakest viewfinder of all the DSLRs in our group. The D300's viewfinder is the only one that includes 100 percent of your image; the other cameras' viewfinders include slightly less of the image.

Removable Lenses

DSLRs have removable lenses, which lets you custom-tailor the camera based on the shooting situation. You can use a lens with a specific focal length, or a lens that's more capable in low light, or one that yields better sharpness. There are even specialized lenses that create cool-looking distortions or that can correct for perspective distortion.

The EOS 40D, the D300, and the Alpha DSLR-A700 are each available in a kit that includes a starter lens; or you can buy the body only. The DMC-L10K is available only as a kit with a high-quality Leica 14mm–50mm (28mm–100mm 35mm equivalent) lens, which may be the only lens you'll need. The E-3 comes with the body only; we tested it with Olympus's $999 12mm–60mm (24mm–1,120mm 35mm equivalent) Supersonic Wave Drive lens.

There's no standard specification for how a lens attaches to a DSLR, so Canon cameras require Canon-compatible lenses, Nikon cameras require Nikon-specific lenses, and so on. When considering a DSLR, look at the breadth of supported lenses, both those provided by the camera's maker and those sold by third-party manufacturers. The D300 and EOS 40D can use lenses made by a third party such as Sigma (www.sigmaphoto.com) or Tamron (www.tamron.com), both of which make some excellent lenses.

Olympus and Panasonic are part of the Four Thirds consortium of camera makers, which means that the E-3 and DMC-L10K conform to the Four Thirds System. Any Four Thirds–compatible lens, regardless of its manufacturer, will work with either of these cameras. Several camera companies support this system, which means that a fair number of lenses are available for these two cameras—but still far fewer than what you'll find for Canon or Nikon DSLRs.

All Four Thirds DSLRs shoot pictures in a 4:3 aspect ratio. This is the same ratio most point-and-shoots use, so it will probably feel comfortable to a DSLR newcomer. If you like a wider aspect ratio or if you're used to shooting with a film camera, then you might prefer the 3:2 aspect ratio (the same as for film) of the other DSLRs in this group.

The lens's focal length governs the field of view's width. A lens with a longer focal length has more magnification and, therefore, a narrower field of view. If you're coming from a film background, you're probably familiar with the fact that a 50mm lens has about the same field of view as your eye. Lenses longer than 50mm are considered telephoto, while shorter lenses are considered wide angle.

A midrange DSLR offers better performance, sturdier construction, more features, and often better image quality than an entry-level DSLR does.

A DSLR's image sensor is smaller than a frame of 35mm film; plus, the sensor can vary in size among DSLR manufacturers. To find common ground when comparing DSLRs, you can convert the field of view so that it's based on 35mm film instead of on the camera's sensor. For example, the DMC-L10K and E-3 have a 2× multiplication factor for calculating focal length equivalency. The EOS 40D has a 1.6×

Panasonic Lumix DMC-L10K

Olympus E-3

factor, and the D300 and the Alpha DSLR-A700 have a 1.5× factor. That means a 50mm lens on the EOS 40D yields a field of view equivalent to an 80mm lens on a film SLR camera.

Stabilization

When you shoot in low light, cameras use a longer shutter speed to capture enough light for a proper exposure. Unfortunately, a longer shutter speed means that any movement of the camera results in a soft—or outright blurry—image. To compensate for movement and to capture better handheld images in low light, many cameras have a stabilization system.

Olympus and Sony employ sensor-based stabilization, which moves the image sensor inside the camera body. The advantage of a sensor-based system is that it works with any lens—you get stabilization across your entire lens collection and individual lenses generally cost less, since they don't have to include stabilization technology.

Canon, Nikon, and Panasonic offer many lenses that have built-in stabilization. These lenses alter their optics on-the-fly to counter camera motion. You can see the effects of lens-based stabilization in the viewfinder, which greatly eases framing when you're using very long lenses. Sensor-based stabilization doesn't have that advantage.

We found that Canon's, Nikon's, and Panasonic's lens-based systems produce more-effective stabilization than the current sensor-based offerings from Olympus and Sony.

Bulky Bodies

The DSLRs we tested are larger and heavier than a typical entry-level DSLR. All are well made and feel good in the hand; they don't seem cheap or flimsy, and you won't encounter creaks or chintzy plastic finishes. These models feel more formidable than entry-level DSLRs—you'll need to adjust to their bulkiness.

Don't buy any camera without having had some hands-on experience with it. You'll carry the camera for lengthy periods of time, and being able to use it quickly is critical for good shooting. You need to determine whether the grip fits your hands, whether you can reach all critical controls, and whether you're comfortable with its weight. A heavy camera is not always a bad choice; it's a drag to carry around all day long, but steady framing is often easier if the camera has a little more heft.

The DMC-L10K is the smallest DSLR we tested. If you have small hands or are looking for a light DSLR, this one might be for you. The E-3 gets the nod for durability, thanks to its completely weather-sealed body. Its sturdy construction can handle harsh environments.

Camera Controls

Compared with entry-level DSLRs, midrange DSLRs offer a far greater range of dedicated controls, which gives you easier access to the camera's many features. Entry-level DSLRs tend to bury

Canon EOS 40D

●●●●½

PROS: Great image quality; excellent lens selection; improved viewfinder and status display; very good at high ISO; sensor cleaning; customizable mode settings; redesigned menus offer faster navigation.

CONS: Live-view mode doesn't offer contrast-detecting autofocus; interface changes create a learning curve for Canon users migrating from previous Canon DSLRs.

PRICE: body only, $1,299; with EF 28mm–135mm lens, $1,499

COMPANY: Canon, www.usa.canon.com

FULL REVIEW: macworld.com/3433

Nikon D300

●●●●½

OUR PICK

PROS: Excellent image quality; high ISO performance; good lens selection; market-leading LCD screen; huge feature set; customizable mode settings.

CONS: Menu system requires a lot of scrolling; ISO control is difficult to reach; limited customization.

PRICE: body only, $1,800; with 18mm–135mm Nikkor lens, $2,199

COMPANY: Nikon, www.nikonusa.com

FULL REVIEW: macworld.com/3434

Olympus E-3

●●●●

PROS: Very good image quality; very fast autofocus; sturdy build; swivel-and-pivot LCD screen.

CONS: Uses a 4:3 aspect ratio instead of the traditional 35mm 3:2 ratio; selection of available lenses may disappoint users looking for more esoteric choices; sensor-based stabilization is inferior to lens-based stabilization.

PRICE: body only, $1,700; price as tested with lens, $2,699

COMPANY: Olympus, www.olympus.com

FULL REVIEW: macworld.com/3435

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features in the camera's menus, so you have to dig deeper to get to a control.

The D300 and the EOS 40D score best when it comes to camera controls for adjusting your shots. You can easily access the critical controls while holding the camera, and with a little practice, you soon won't have to look away from the viewfinder. The E-3 is next, with a good set of controls and good viewfinder feedback. The DMC-L10K and the Alpha DSLR-A700 come close, but access to essential features is not as streamlined and easy as it is on the other DSLRs.

The ability to switch shooting modes quickly is essential in fast-moving situations. The DMC-L10K, the Alpha DSLR-A700, and the EOS 40D all feature top-mounted mode dials that make changing modes quick and easy. With the D300 and E-3, you press a Mode button and then turn a control wheel to change modes.

There are many secondary functions to consider. If you often bracket shots, you'll want quick access to an autobracketing feature. If you're a JPEG shooter, you need to be able to change white balance easily. Flash shooters want quick access to flash exposure compensation. Photographers of all types want to change metering modes regularly. The D300, E-3, and EOS 40D all have externally mounted controls for most functions. With the DMC-L10K and the DSLR-A700, you'll often find yourself digging into a menu.

The D300 and the EOS 40D score extra points for their customization options, which allow you to fine-tune the interface in a number of different ways. Both cameras provide menu customization, which can make it easier to group often-used menu settings in one place. The EOS 40D also provides custom settings on its mode dial that allow you to store groups of settings and retrieve them with a quick turn of the dial. The D300 provides two programmable buttons on the front of the camera. The Alpha DSLR-A700 provides a customizable button on the back of the camera. These are great features that let you fine-tune these cameras to the way you like to work.

Status LCD

Many midrange DSLRs have a dedicated status LCD mounted on top of the camera, in addition to the back-mounted LCD. The D300, the E-3, and the EOS 40D have status LCDs that show all essential camera settings. On the DMC-L10K and the Alpha DSLR-A700, the back-mounted LCD serves as a status readout.

I prefer a top-mounted LCD for two reasons: it's less obtrusive in low light because it's not so bright, and, when you're looking through the viewfinder, it doesn't shine in your eyes. For example, with the DMC-L10K and the Alpha DSLR-A700, if you perform an exposure compensation adjustment, the LCD screen turns on to show your change. In low light, this can be distracting.

The Alpha DSLR-A700 outranks the DMC-L10K, though, thanks to its eyepiece sensor. If you have the LCD turned on to read settings, and then you put the Alpha DSLR-A700 up to your eye, the LCD automatically shuts off. Still, the dedicated top-mounted settings LCD on the other DSLRs make for slightly more streamlined operation.

Panasonic Lumix DMC-L10K

●●●½

PROS: Good overall image quality; excellent included lens; small size; swivel-and-tilt LCD screen; good feature set.

CONS: Slow burst speed; weak viewfinder; no top-mounted status display; menus are slow to respond.

PRICE: with Leica 14mm–50mm lens, $1,300

COMPANY: Panasonic, www.panasonic.com

FULL REVIEW: macworld.com/3436

Sony Alpha DSLR-A700

●●●½

PROS: Great build quality; good image quality; fast performance; beautiful LCD screen.

CONS: No status LCD; no live view; cumbersome button placement; sensor-based stabilization is inferior to lens-based stabilization; in-viewfinder status display doesn't show ISO setting; rear LCD screen turns on at inappropriate times.

PRICE: body only, $1,400; with DT 16mm–105mm zoom lens, $1,900

COMPANY: Sony, www.sony.com

FULL REVIEW: macworld.com/3437

Sensor Cleaning

Because the lens of a DSLR camera is removable, particles can easily get inside the camera body and stick to the sensor. These particles will appear on pictures as black spots and smudges. If you have a DSLR, there will come a day when you'll need to clean its sensor.

All the DSLRs in this review have built-in sensor-cleaning mechanisms, which basically shake the camera sensor to dislodge any dust or particulate matter. The built-in cleaners don't interrupt your shooting process, but your camera may accumulate debris over time that it just can't shake off.

In these situations, you need to clean the sensor by hand. You can take the camera into a shop or send it to the manufacturer for a professional cleaning, or you can do it yourself. Sensor cleaning involves specialized materials, such as those made by Visible Dust (www.visibledust.com), and is not a job to take lightly. You can damage your camera, so carefully read the instructions that accompany your cleaning gear. Find out more about DSLR sensor cleaners at macworld.com/3442.

Performance

With these DSLRs, you won't feel any noticeable shutter lag—the camera should fire as soon as you press the button, assuming you've already done a half-press to autofocus.

The main performance concern will be autofocus speed, which can vary depending on the brightness of your surroundings. When you try out a DSLR, test the autofocus at different distances, and if you can find a dark spot (under tables and counters) in the camera store, try to focus on that area. All of these DSLRs have very good auto-

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focus mechanisms, but the E-3 is definitely the speedster. If you're a wildlife or sports photographer, you'll appreciate that speed.

The D300 and the EOS 40D have the largest selection of autofocusing options. In addition to providing all of the same focus modes as the other DSLRs, these two cameras have special modes that can track moving objects, making them ideal for sports and wildlife.

Sports and nature shooters also need to consider burst speed, which is a measure of how quickly the camera can shoot sequential frames. The EOS 40D scores best at 6.5 frames per second (fps), with the D300 close behind at 6 fps. The Alpha DSLR-A700 and E-3 both provide a respectable 5 fps, while the DMC-L10K offers a mere 3 fps.

Live View

It used to be that DSLRs had only the camera's optical viewfinder for framing shots. That might sound like a limitation, but it's not, because the high-quality optical viewfinder is one of the main reasons people choose a DSLR. However, when your DSLR is mounted on a tripod to shoot a landscape, an object, or some other still subject, it's a hassle to look through a viewfinder. It's especially difficult if the camera is in a high or awkward position.

Fortunately, this is the year of live view, which lets you use the LCD as a viewfinder to preview your shots, just as you would with a point-and-shoot camera. Years ago, DSLRs had much smaller LCDs, making live view impractical. Now, all of these cameras sport big LCDs, and live view has become a truly helpful tool. Live view makes it easier to shoot with your DSLR at angles where it's difficult to look through a viewfinder. The Alpha DSLR-A700 is the only camera we tested that does not have live view.

The Alpha DSLR-A700, the D300, and the EOS 40D have 3-inch LCDs, while the DMC-L10K and the E-3 have 2.5-inch LCDs—these smaller screens can flip out and swivel, making them easy to see from any angle. As far as LCD image quality goes, the D300 easily has the best display.

When you look through a DSLR's viewfinder, light enters the lens, bounces off a mirror—avoiding the DSLR's sensor—and goes into the viewfinder. But in live view, the sensor provides the image you see in the LCD; that mirror is in the way and needs to move to allow live view to operate.

So just move the mirror out of the way, right? But that creates another problem: with the mirror out of the way, the DSLR's focusing sensors can't get the data they need to focus. Each DSLR takes a different approach to solving this problem. In the EOS 40D with live view on, you can focus the lens manually. To help with this job, the camera can zoom the live-view image up to 10x so you see fine detail. You can still use autofocus; the EOS 40D flips the mirror down to focus, and then flips it back up to display the live-view image. It's a slower way to focus, but it works fine, and for the types of shots for which you tend to use live view (generally with the camera on a tripod), the delay shouldn't pose a problem. The E-3 uses a similar method but lacks the viewfinder zoom capability that can ease manual focusing.

The D300's and the DMC-L10K's live view supports manual focusing, but these cameras can also autofocus while the mirror is up. They read the image off the sensor and perform a contrast-detecting autofocus—the same process as in a point-and-shoot camera. With the DMC-L10K, you also get face detection and many of the other autofocus modes found in a point-and-shoot. With the D300, you can select any point in the image and ask the camera to focus on that.

Image Quality

The DSLRs we reviewed don't boast higher pixel counts than many of today's point-and-shoots, but the DSLRs

Digital SLR Cameras Compared

	Canon EOS 40D	**Nikon D300** OUR PICK	**Olympus E-3**	**Panasonic Lumix DMC-L10K**	**Sony Alpha DSLR-A700**
RATING	●●●●◐	●●●●◐	●●●●	●●●◐	●●●◐
PRICE	body only, $1,299; with EF 28mm–135mm lens, $1,499	body only, $1,800; with 18mm–135mm Nikkor lens, $2,199	body only, $1,700; price as tested with lens, $2,699	with Leica 14mm–50mm lens, $1,300	body only, $1,400; with DT 16mm–105mm zoom lens, $1,900
IMAGE QUALITY*					
COLOR QUALITY	Superior	Very Good	Good	Good	Good
CLARITY	Good	Good	Superior	Very Good	Very Good
SPECIFICATIONS					
RESOLUTION (IN MEGAPIXELS)	10.1	12.3	10.1	10.1	12.2
FOCAL LENGTH (35MM EQUIVALENT)	45mm–216mm	27mm–225mm	not applicable†	28mm–100mm	24mm–225mm
BATTERY TYPE	rechargeable lithium ion	rechargeable lithium ion	rechargeable lithium ion	rechargeable lithium ion	rechargeable lithium ion
MEDIA/NUMBER OF SLOTS	CompactFlash/1	CompactFlash/1	CompactFlash, xD-Picture Card/2	Secure Digital/1	CompactFlash, Memory Stick Duo/2
SIZE (W X H X D)	5.7x4.2x2.9	5.8x4.5x2.9	5.6x4.6x2.9	5.3x3.8x3.1	5.6x4.3x3.3
WEIGHT (IN OUNCES)	26.1	29.3	28.6	35.1	27.1

*Scale is Superior, Very Good, Good, Fair, Poor. †Available body only. Tested with a 12mm–60mm (24mm–1,120mm 35mm equivalent) Supersonic Wave Drive lens ($999).

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have larger sensors and better image processing. That means they shoot much better images with less noise. They also yield better image quality than some of the entry-level DSLRs on the market, thanks to their latest-generation image-processing chips.

The good news is that all of these DSLRs deliver great image quality. They all support the Raw file format, which offers more editing flexibility when you open the pictures in an image-editing program such as Adobe Photoshop. Raw also provides slightly better image quality than JPEG; however, JPEG format is compressed, so you can save more images on a DSLR's memory card in JPEG than in Raw format.

The EOS 40D has a broader *dynamic range* (the maximum range of colors a camera can capture) than any of the other DSLRs we tested. However, all of these cameras capture more colors than you can print using any current printing technology.

High ISO performance is critical if you shoot in low light or if you routinely change ISO settings. All of these DSLRs fare well up to ISO 400. Above that, you'll begin to see noise—speckle patterns in your images. Bear in mind, though, that these flaws may or may not be visible in print, depending on what print size you have in mind.

At higher ISOs (800 and up), images from the DMC-L10K showed the most noise but were still very good. Images from the EOS 40D and the D300 had the least amount of noise, but it was difficult to see the difference between the images those DSLRs produced and those from the Alpha DSLR-A700 and the E-3.

When we took photo samples from each camera and presented them to a jury for evaluation, we used each camera's default automatic settings. We shot the same subjects under the same conditions with each DSLR. All of the models have controls that let you tweak settings to get the best image, so it's important to have quick, easy access to those controls. Also, image quality doesn't rely solely upon the camera body and its sensor; a high-quality lens makes a huge difference. For example, the E-3 scored high in our jury results, but we tested it with a $1,000 lens with great optics—not the typical starter lens in a kit. For more details on each DSLR's image quality, follow the link to its full review online.

Macworld's Buying Advice

Two DSLRs stood out: the Nikon D300 is packed with shooting features and has a great live-view implementation, and its LCD is the best in the business; the Canon EOS 40D's controls are terrific, and the camera has the broadest dynamic range of the group. Both cameras offer excellent design, image quality, and lens availability. In the end, we chose the Nikon D300 as our pick. However, all of these midrange DSLRs are good cameras.

Ben Long is the author of *Complete Digital Photography*, fourth edition (Charles River Media, 2007).

The Letter of the Lens

All of the DSLRs in this review use sensors that are smaller than a frame of 35mm film. The effective field of view of any lens that you choose is narrower than it would be on a 35mm film camera. In practice, this means that you need to multiply the focal length of the lens by a certain number to figure out its 35mm equivalent length. For example, a 50mm lens on the Nikon D300 has the same field of view as a 75mm lens on a 35mm camera, because the D300 has a 1.5x multiplication factor.

For long lenses, this is great because you effectively get a lens that has the field of view of a much longer lens. For wide-angle lenses, though, that nice wide 24mm lens you have becomes a not-so-wide 36mm lens when mounted on the D300.

Canon and Nikon make special lenses designed specifically for their cropped sensor cameras. Canon lenses that have an S moniker and Nikon lenses labeled DX are both engineered specifically for the smaller sensors in the EOS 40D and the D300, respectively.

You cannot use these lenses on cameras that don't have a cropped sensor. Similarly, if you're thinking that you might one day upgrade to a camera with a full-frame sensor, such as the Canon EOS 5D or Nikon D3, keep in mind that these lenses will not work on those cameras.

Sony Alpha DSLR-A700

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Building a Better Backup Device

Firmware updates have the Time Capsule living up to its billing **BY GLENN FLEISHMAN**

Apple's Time Capsule promises simplicity. It pairs an internal hard drive for storing networked backups via Leopard's Time Machine with the connectivity of an 802.11n AirPort Extreme Base Station. Apple's new storage device should work reliably and predictably, day in and day out. And users should expect that after setting it up, they will enjoy fast and rock-solid regular backups of their networked Macs, along with easy retrieval of archived items.

That wasn't the case when Apple released the Time Capsule in late February. But a pair of software updates released in mid-March smoothed the rough edges, improving throughput while adding a valuable option that offsets much of the limitation of having a sealed internal drive.

Networked Time Machine

The Time Capsule combines the functionality of two separate products: the AirPort Extreme Base Station with Gigabit Ethernet (●●●●½; macworld.com/3109), on which it's based, and a networked hard drive. As a base station and Ethernet switch, the Time Capsule performed as admirably as the AirPort Extreme Base Station in my tests, delivering essentially identical throughput and features.

Time Capsule

●●●●

PROS: Allows for Time Machine backups both internally and via a USB-connected drive; includes all AirPort Extreme features; has archive option for simplified off-site backups; houses drive and power supply in one tidy case.

CONS: Can't swap internal drive; Time Machine's hourly backups are too frequent for a networked system.

OS X COMPATIBILITY: 10.4 (Tiger), 10.5 (Leopard)—Leopard required for networked Time Machine backups

PRICE: 500GB, $299; 1TB, $499

COMPANY: Apple, www.apple.com

PHOTOGRAPH BY PETER BELANGER; PORTS PHOTOGRAPH COURTESY OF APPLE

As a networked file server, the Time Capsule's internal drive appears as a potential destination for Time Machine's backups. Time Machine can store archives on a separate hard drive connected to the computer on which it's running—either a different physical drive or a partition on the startup drive (though archiving to the latter will trigger a warning). Time Machine can also copy files over a network to the drive of another machine running the end-user version of Leopard, to a Leopard Server system, or to a Time Capsule.

After you configure the Time Capsule for a local network, its internal drive and any external drive connected via USB (or a USB hub connected to the USB port) will appear as potential target volumes in Time Machine; you don't need to connect to the Time Capsule AFP (Apple Filing Protocol) server in the Finder for those volumes to appear as options for Time Machine.

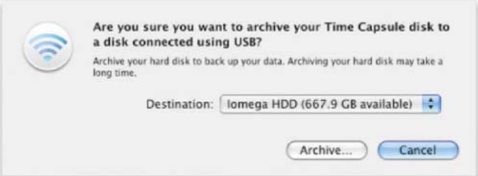
Time Machine stores files on remote backup volumes in the *sparse image* format—an Apple disk-image type that changes storage size dynamically as contents are modified, rather than having a specific and unchanging size when created. You can use a Time Capsule as a source for restoring files to the machine that created the backup via Time Machine; you can use it with Migration Assistant to move files to a new system; and you can use it to restore a system that boots via the Leopard installation DVD.

Even a fast drive is hamstrung by slow networking software. The Time Capsule's AFP performance lags behind that of stand-alone Macs, due to either inefficient server software or a sluggish processor, or both. In my testing, a 1.07GB file took 40 seconds to transfer between two Leopard systems over AFP on a Gigabit Ethernet network (about 200 megabits per second), but the same file took 115 seconds to copy directly from a Time Machine backup folder to a Leopard system (about 75 Mbps). AFP performance improved when I installed Time Capsule and AirPort Base Station (802.11n) Firmware 7.3.1 (available at macworld.com/3487) as well as Time Machine and AirPort Updates v1.0 (available at macworld.com/3488).

With Time Machine added to the mix, performance suffered in my initial testing, with speeds as low as 15 Mbps on multiple networks and systems tested with the Time Capsule's internal drive, regardless of whether backups were run over Gigabit Ethernet or Wi-Fi. However, an obscure network setting change quadrupled backup throughput. Apple was clearly aware that something was awry with Leopard's networking performance, because it fixed Leopard's networking system through the firmware updates, obviating the need to change this setting. Depending on the size and number of files being backed up, throughput ranged from 45 to 60 Mbps over Gigabit Ethernet. This would put an initial 100GB backup at four to six hours.

Time Machine appears to run only slightly slower when using the best 802.11n Wi-Fi configuration (wide channels at 5GHz) with the Time Capsule than when using a computer directly connected via Gigabit Ethernet. Backups over 802.11g are painfully slow for an initial backup, however.

You can't configure Time Machine to run backups less frequently than hourly unless you use third-party hacks—one of which was disabled by the latest Leopard updates. Hourly backups aren't a workable solution for a network with several 802.11g-based Macs. That's because most e-mail programs typically modify large files—some as big as several gigabytes—whenever e-mail is received, sent, or filed. One large file from each networked computer that's being backed up hourly could clog the network. And turning Time Machine off except when backups are needed defeats the purpose of automated backups. This issue of an hourly backup schedule applies to all networked Time Machine backups, of course.



Are you sure you want to archive your Time Capsule disk to a disk connected using USB?

Archive your hard disk to back up your data. Archiving your hard disk may take a long time.

Destination: Iomega HDD (667.9 GB available)

Off-Site Backup Apple added an option for rapidly copying the contents of the Time Capsule's internal drive to a drive connected via USB, to allow for a form of off-site backup.

Added Features

An important addition in the latest firmware and in AirPort Utility dramatically changed my opinion of the closed nature of the internal drive, which renders it unswappable. Typically, I recommend that even home users retain at least one off-site backup, to avoid losing precious files in a fire or other disaster. In the beginning, the Time Capsule seemed to encourage users to keep a single backup in the same place as the computers backing up to its drive, making it vulnerable to disasters.

The revised software and firmware add an Archive option in the Disks tab of AirPort Utility for copying the contents of the internal drive to a drive connected via USB without a computer mediating—and thus slowing down—the operation. Clicking on Archive allows you to copy the full current state of the drive (you can't copy just selected portions). The external USB drive, which you can choose from multiple drives if you have more than one attached, isn't erased, and it must have enough free storage space for the operation to complete successfully. (Archiving isn't available between external USB drives, whether they are connected to a Time Capsule or an AirPort Extreme Base Station.)

In my tests, the Time Capsule copied at a decent 100 Mbps; so, for example, 300GB of sparse-image backup archives could be duplicated in less than seven hours. While copying via USB, the Time Capsule locks out Time Machine backups and file-server use (it warns you in AirPort Utility beforehand). AirPort Utility displays the progress of the copy process, and Time Capsule's LED indicator shines amber until the operation is complete. Time Capsule's networking features continue to work, however.

The Time Capsule clearly wasn't ready to ship to customers when it first went out the door. However, software updates have ironed out many initial glitches.

Macworld's Buying Advice

The Time Capsule is ideally suited for a home network that hasn't yet been upgraded to an 802.11n wireless network (and, therefore, doesn't yet have a new AirPort Extreme Base Station). However, the Time Capsule's $299 to $499 price tag may be slightly too high for that kind of casual user.

Get Connected The ports on the back of the Time Capsule, from left to right: power, USB, WAN, three Ethernet ports, and the security slot.

For people who already have an 802.11n AirPort Extreme, attaching an external drive or connecting a drive to another computer on the same network is a good alternative to using the Time Capsule.

Small offices might find the Time Capsule a reasonable option, especially the 1TB flavor paired with regular archiving of the internal drive to an external drive that's moved off-site for safety. However, because Time Machine doesn't let you specify when or how often to perform backups, it could easily overwhelm a network that's full of 802.11g devices, or an office that handles a lot of photos and video. Apple needs to consider adding an Advanced button in Time Machine that allows for running network backups when networks aren't busy; hourly is too often.

Based on the significant improvements added via firmware, the AirPort driver, and Time Machine updates, the Time Capsule clearly wasn't ready to ship to customers when it first went out the door. However, software updates have ironed out many of the Time Capsule's initial glitches, leaving a solid backup device in its place.

Glenn Fleishman is the author of *Take Control of Your 802.11n AirPort Extreme Network* (Take Control Books, 2007), and writes daily about wireless networking at his Web site, Wi-Fi Networking News (wifinetnews.com).

macworld.com/reviews

What we're reviewing online this month

SOFTWARE

AccountEdge 2008 △

RATING: ●●●◐ **PRICE:** $299 **COMPANY:** MYOB US **URL:** www.myob-us.com

The latest version of AccountEdge, the excellent business accounting program, sports an updated appearance, better tools for handling employee sick and vacation leave, iCal and .Mac integration, and some minor enhancements to existing features. AccountEdge 2008 has a familiar but completely resurfaced Command Center, the main interface you use to access all of the software's accounting features. AccountEdge is still the best business-targeted accounting program available for the Mac. But, as in last year's release, new features added to the 2008 version may be of negligible value to businesses already using the program (macworld.com/3502).

Live 7 △

RATING: ●●●●● **PRICE:** $599; download, $499 **COMPANY:** Ableton **URL:** www.ableton.com

Ableton's Live is a digital-audio workstation (DAW) program that lets you trigger prerecorded audio with a Mac's keyboard or mouse, or a MIDI controller. Unlike traditional DAWs, MIDI control makes Live a playable instrument as well as an audio editor and MIDI sequencer. The new Live 7 delivers refinements to features found in previous versions, and introduces new capabilities that will be welcome news to musicians, DJs, and producers. Ableton Live is an extraordinary audio tool that has now become even more musical. If you're a Live 6 user, you'll want to upgrade. After working your way around the interface and discovering the program's many wonders, you'll be hooked (macworld.com/3503).

FIND IT ONLINE For expanded reviews, type the blue URL at the end of each summary into your browser's address bar.

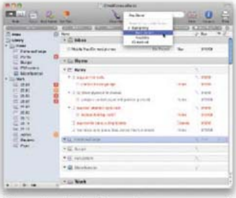
Neon Tango △

RATING: ●●●● **PRICE:** $25 **COMPANY:** Freeverse **URL:** www.freeverse.com

Neon Tango is a deconstructed arcade action game that's psychedelic, intense, and really cool-looking. There's no storyline—just a whole lot of action. In this 2-D, top-down shooter, you navigate a large play area filled with obstacles and hostile enemies. Operating a dart-shaped ship that fires bursts of lasers, you can deploy power-up weapons that you collect from around the screen. A map or radar screen in the upper right corner tells you where the enemies (and goodies) are located and gives you a rough sketch of your surroundings. Neon Tango may be too abstract for some players, but if you're interested in retro-gaming, you ought to check it out (macworld.com/3504).

OmniFocus 1.0

RATING: ●●●◐ **PRICE:** $80 **COMPANY:** The Omni Group **URL:** www.omnigroup.com

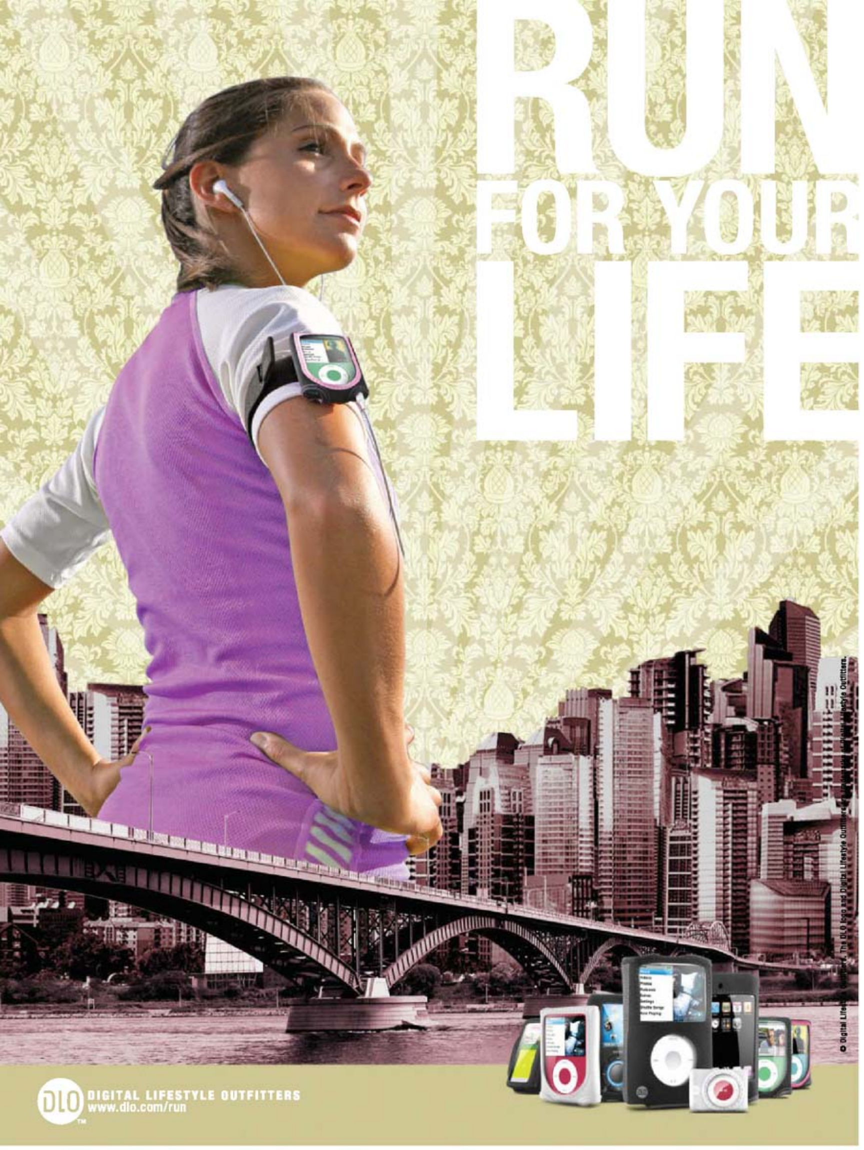


Managing to-do items is a very personal thing. Some people deploy elaborate project-management systems to make sure they get everything done. OmniFocus 1.0.1, based on David Allen's popular Getting Things Done productivity system, gives you a variety of ways to create new tasks, and to organize, view, and access the information about your list. The program supports keyboard shortcuts and AppleScripts, and works with iCal and .Mac. OmniFocus is one of the nicest, most polished to-do managers out there. If you're the kind of person who spends as much time managing your to-do list as you do actually completing the tasks on it, you'll be able to geek out to your heart's content (macworld.com/3448).

Peggle Deluxe △

RATING: ●●●●◐ **PRICE:** $20 **COMPANY:** PopCap Games **URL:** www.popcapgames.com

Peggle is one of the most fun and addictive casual games available for the Mac. In it, you have to make orange-colored pegs disappear by rebounding a ball that you fire out of a cannon. You can't control how the ball falls; instead,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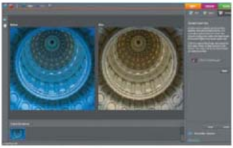
you take careful aim with your cannon and hope that the ball hits its intended target. Each new level reveals a different puzzle; as you progress through the levels, you encounter new characters called Peggle Masters. Each Peggle Master has a special power. When you finally clear the screen of the orange pegs, you get what is arguably one of the best payoffs ever in a casual game: the action shifts into slow motion and, following a drumroll, you hear a choir singing Beethoven's "Ode to Joy" as the ball begins to sparkle and a rainbow appears. If you haven't yet been bitten by the Peggle bug, now's the time to give the game a try (macworld.com/3449).



Photoshop Elements 6 △

RATING: ★★★★½ **PRICE:** $90 **COMPANY:** Adobe Systems **URL:** www.adobe.com

Adobe promised to make photo editing easier than ever—and the company has delivered. Brimming with new features like a Guided Edit mode, an amazing PhotoMerge Group Shot feature, and a slew of tools snatched from Photoshop CS3 that are tucked inside brand-new workspaces, Elements 6 makes photo editing for amateur photographers, hobbyists, and scrapbookers more accessible—and more fun—than ever. The new Guided Edit mode makes photo editing accessible to complete novices, while the Quick Edit and Full Edit modes give users plenty of room to grow as their skills increase. With increased Raw support and the inclusion of Adobe Bridge, advanced amateur digital photographers and hobbyists will likely have all the photo-processing power they'll ever need (macworld.com/3505).

HARDWARE

i-Station Traveller for iPhone and iPod Touch

RATING: ★★★½ **PRICE:** $60 **COMPANY:** Logic3 **URL:** www.logic3usa.com

The i-Station Traveller, a tiny speaker system designed specifically for the iPhone and the iPod touch, stands out not necessarily because it offers superior performance or features compared to other systems on the market, but

AirPort Express (802.11n)

RATING: ★★★★ **PRICE:** $99 **COMPANY:** Apple **URL:** www.apple.com

Like the original AirPort Express base station, Apple's latest version is a Wi-Fi access point that's compact enough (3.6 by 2.9 by 1.1 inches, and 6.7 ounces) to fit in a laptop bag and is designed to plug directly into an electrical outlet. You can use the Express to create a wireless network of its own or to extend the range of a network provided by either another Express or by an AirPort Extreme Base Station. The new Express supports the 802.11n network standard and inherits support for 802.11a networks, PIN-based guest access, and time-based network access. The Express is also the first AirPort base station to provide a new feature called ProxySTA, which lets the Express act as a wireless-to-Ethernet Bridge to extend your wireless network to wired clients without a complex setup process or requiring wireless relaying. If you don't need the features that are unique to Apple's AirPort Extreme Base Station, the new Express is an affordable and portable alternative, although one that doesn't quite match the Extreme's performance. It's also the choice to make if you want to extend your existing Apple-branded network wirelessly or to wired devices, send your computer's audio to a remote stereo system, or use a base station in more than one location (macworld.com/3509).

AIRPORT AND XSERVE PHOTOGRAPHS COURTESY OF APPLE

because it's a nice combination of small size, good sound quality, and reasonable price. It's 6.7 inches wide, 3.5 inches tall, and 1.3 inches thick when collapsed for transit, and it weighs just 11 ounces with four AAA batteries installed. Instead of a traditional iPod dock, the Traveller uses a standard headphone cable to connect; the cable, which features an iPhone-friendly headphone plug, is permanently attached to the system and stores neatly in a groove on the back for travel. With a few tweaks from the company, the system's video-viewing feature would be ideal for a desk or airline tray table; however, the current viewing angle is a bit awkward. And if you don't plan on watching video at all, consider the original i-Station Traveller instead; although its sound quality is a bit tinnier, the device is about half the price and half the size (macworld.com/3506).

SCX-4500

RATING: ●●●◐ **PRICE:** $300 **COMPANY:** Samsung **URL:** www.samsung.com

For the cost-conscious customer, a monochrome multifunction laser printer like Samsung's SCX-4500, which includes a built-in scanner and copier, is a welcome alternative to the popular but pricier color printers out there. The SCX-4500 is a good overall performer, delivering high-quality monochrome laser prints and color scans without putting a dent in your budget. An attractive, pleasantly quiet, and user-friendly MFP, the SCX-4500 turns in solid all-around results. The lack of an output tray is irritating, but aside from that, the SCX-4500 would be a good fit in a home office (macworld.com/3507).

Vers 2x △

RATING: ●●●◐ **PRICE:** $180 **COMPANY:** VersAudio **URL:** www.versaudio.com

The Vers 2x is a unique iPod speaker system, but whether it appeals to you will depend largely on the relative value you place on design, environmentally focused production, sound quality, and features. For a basic desktop speaker system, the 2x ranks up there with the most attractive we've tested, is solidly—and sustainably—built, and sounds decent. At $180, however, the 2x's features and sound quality are limited compared with those of some better systems in this price range (macworld.com/3508).

Xserve △

RATING: ●●●● **PRICE:** $2,999 (base configuration) **COMPANY:** Apple **URL:** www.apple.com

Apple has upgraded the Xserve, its rack-mount server. Now outfitted with Intel's latest quad-core Xeon processors, today's Xserve packs a lot more power into the same slim package. The Xserve's base configuration offers a single quad-core 2.8GHz Xeon processor, 2GB of 800MHz DDR2 memory, and a single 80GB 7,200-rpm Serial ATA hard drive; but build-to-order models give you up to eight cores of processing power, 32GB of RAM, and three 300GB SAS hard drives. The hardware RAID has returned to the setup, but it costs an additional $800. The Lights Out Management feature still presents challenges for network administrators, and keeping the server environment appropriately air-conditioned for optimal operation has gotten more expensive. Still, the new Xserve is so fast, our lab could not muster enough client computers to discover its performance ceiling (macworld.com/3451).

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Top Products

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PRINTERS

LASER PRINTER

C6100dn

RATING: ●●●●◐
PRICE: $699
COMPANY: Oki Data
URL: www.okidata.com

The C6100dn offers great print quality, duplexing, easy network connectivity, and quick printing speeds (macworld.com/1670).

INK-JET PHOTO PRINTER

Stylus Photo 1400

RATING: ●●●●
PRICE: $275
COMPANY: Epson
URL: www.epson.com

The Stylus Photo 1400 is a remarkably affordable large-format printer that produces photos rich in color and detail (macworld.com/2924).

COMPACT PHOTO PRINTER

PictureMate Zoom PM 290

RATING: ●●●●◐ **PRICE:** $200
COMPANY: Epson
URL: www.epson.com

Affordable, speedy, and fun to use, the PictureMate Zoom is the best overall portable photo printer on the market (macworld.com/3102).

MULTIFUNCTION INK-JET

Stylus Photo RX680

RATING: ●●●●◐ **PRICE:** $130
COMPANY: Epson
URL: www.epson.com

With terrific print quality and features such as two paper trays, a duplexer, and stand-alone photo restoration, the Epson Stylus Photo RX680 is truly an excellent multifunction printer (macworld.com/3458).

MULTIFUNCTION LASER

X500N

RATING: ●●●●
PRICE: $343
COMPANY: Lexmark
URL: www.lexmark.com

An all-in-one color laser printer, scanner, and copier, the X500N is a strong overall performer (macworld.com/3278).

FLATBED SCANNER

Perfection V700 Photo

RATING: ●●●●
PRICE: $488
COMPANY: Epson
URL: www.epson.com

The Perfection V700 Photo is a fine midrange scanner for digitizing reflective media and transparencies (macworld.com/1519).

DIGITAL CAMERAS

DIGITAL SLR

D40

RATING: ●●●●
PRICE: $450
COMPANY: Nikon
URL: www.nikonusa.com

The D40 comes with every feature you'd desire in a DSLR: adjustable ISO, Raw mode, and a variety of image-processing features (macworld.com/2498).

COMPACT DIGITAL CAMERA

NV11

RATING: ●●●●◐
PRICE: $226
COMPANY: Samsung
URL: www.samsung.com

An excellent digital camera, the NV11 equally accommodates both beginners and advanced shutterbugs (macworld.com/2984).

MINIDV CAMCORDER

PV-GS320

RATING: ●●●●
PRICE: $323
COMPANY: Panasonic **URL:** www.panasonic.com

The PV-GS320 camcorder is affordable and shoots stellar video and still images (macworld.com/2701).

LCD MONITOR

LP2465

RATING: ●●●●
PRICE: $625 **COMPANY:** Hewlett-Packard
URL: www.hp.com

The LP2465 is an affordable and adjustable 24-inch display whose 10:16 wide-screen aspect ratio immediately calls to mind the cinema (macworld.com/2508).

FIREWIRE HARD DRIVES

DESKTOP DRIVE

My Book Studio Edition

RATING: ●●●●◐ **PRICE:** $266
COMPANY: Western Digital
URL: www.westerndigital.com

The My Book Studio Edition's versatile connection options, compact design, and good performance add up to a superb 1TB drive (macworld.com/3295).

PORTABLE DRIVE

Rocbit 2B

RATING: ●●●●●
PRICE: $183
COMPANY: Rocsecure **URL:** www.rocsecure.com

Featuring real-time encryption, the Rocbit 2B is well worth its cost if security is a concern. In our tests, the Rocbit 2B was 6 to 31 percent faster than three comparable drives from other vendors (macworld.com/1443).

Top Products are those we've recently reviewed in a comparison of like products. As new products become available, we'll update this list. For longer reviews of these products and for other product recommendations, go to macworld.com/reviews. All prices are the best current prices taken from a PriceGrabber survey of retailers as of April 10, 2008.

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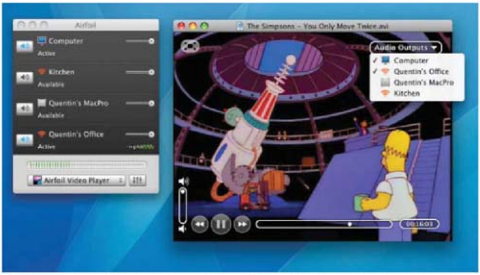


Audio Extender Airfoil can send any audio to multiple remote devices—Macs, Apple TVs, and AirPort Express Base Stations.

AUDIO

Airfoil 3.1.1

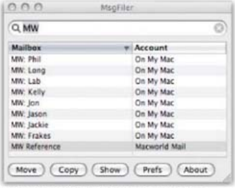
RATING: ●●●●◐ **PRICE:** $25; upgrade from Airfoil 2, $10 **COMPANY:** Rogue Amoeba
URL: www.rogueamoeba.com

The AirTunes feature in iTunes lets you wirelessly stream audio to an AirPort Express Base Station or an Apple TV, so you can listen to your music through any audio system connected to the remote device. But AirTunes works only with iTunes; you can't use another program like QuickTime, professional audio software, or audio playing in a Web browser.

Airfoil lets you do more with AirTunes. Very early versions of AirTunes allowed you to stream audio from any program to a single AirPort Express. With AirTunes 2 you could send any audio on your Mac—including an external audio source—to multiple AirPort Express units, while keeping the audio in sync between them.

Airfoil 3.1.1 lets you send audio from any source to an Apple TV. Though the recent Take Two version of the Apple TV software added this feature to AirTunes, Airfoil adds unique features of its own.

As with previous versions of Airfoil, sending your audio to remote "receivers" is simple: you launch AirTunes, choose the audio source from Airfoil's source-selection pop-up menu, and then click on the speaker button next to each device to which you want the audio transmitted. You can adjust the relative volume of each device, and use the Effects feature to tweak the audio signal as it is sent. Airfoil keeps remote devices synchronized so you don't get the annoying echo effect of multiple audio signals that are out of sync.



MW

Mailbox	Account
MW: Phil	On My Mac
MW: Long	On My Mac
MW: Lab	On My Mac
MW: Kelly	On My Mac
MW: Jon	On My Mac
MW: Jason	On My Mac
MW: Jackie	On My Mac
MW: Frakes	On My Mac
MW Reference	Macworld Mail

Message-Filing Shortcut MsgFiler lets you quickly file your e-mail messages into folders with a few keystrokes.

With a free companion program called Airfoil Speakers, you can set up a remote Mac or Windows PC so it can play audio that you send from Airfoil on your Mac. When you launch Airfoil Speakers on a remote computer, it appears in Airfoil as an output device; enable it, and your chosen audio plays through the remote computer. This is handy if you already have a computer—for example, a Mac mini or a Windows Media Center PC—connected to your home entertainment system.

Another new Airfoil feature is Airfoil Video Player, which lets you play a video on your Mac while sending the video's audio track to remote devices. Although you've always been able to play your video in iTunes, QuickTime Player, or another program while sending the audio via Airfoil, the audio and video are usually out of sync. Airfoil Video Player works with Airfoil to keep the audio and video tracks synchronized.

Airfoil 3.1.1 is a simple and effective option for streaming audio around your home. It's also perhaps the most affordable way to create a multiroom audio system—especially if you already own several Macs and PCs, as well as Apple TVs and AirPort Express Base Stations.

E-MAIL

MsgFiler 2.0.2

RATING: ●●●● **PRICE:** $8 **COMPANY:** Adam Tow
URL: www.tow.com/msgfiler

If you prefer typing keyboard shortcuts to using your mouse, you'll like Adam Tow's MsgFiler 2.0.2 for Apple's Mail. MsgFiler is a Mail add-on that helps you file e-mail messages. You press MsgFiler's keyboard shortcut to bring up the MsgFiler window, then type a few letters of the desired folder's name, and all matching folders appear in a list. To move the currently selected message to the first folder displayed, just press the return key; to choose a different folder,

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type more characters to narrow down the results or use the down-arrow key to select the desired folder.

MsgFiler also has several useful options. For example, you can copy a message to a folder instead of moving it; you can use MsgFiler to quickly open a particular mail folder; and you can set MsgFiler to automatically mark Unread mail as Read when you file it.

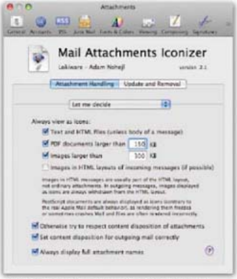
After you've used MsgFiler just a few times, it becomes almost instinctive. I've been using a similar add-on for Microsoft Entourage for years; the lack of this functionality in Mail has been one of the ever-dwindling list of things that keep me from relying on it as my main e-mail client.

E-MAIL

Mail Attachments Iconizer 2.1

RATING: ●●●◐ **PRICE:** $15 **COMPANY:** Adam Nohejl **URL:** lokiware.info

On the topic of Apple's Mail, one thing that bugs me about the program is that it often tries to display the actual contents of attachments in the message window, regardless of the size of each attachment or how the sender wanted it to be displayed. This may be fine for small attachments, but I frequently receive large images and PDF files; opening a message with such attachments can freeze Mail while the program renders the attachments. When I print a message with attachments, the previews of the attachments print as well.



Mail Attachments Iconizer
Lokiware - Adam Nohejl version 2.1

Let me decide

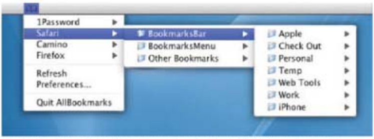
Always view as icons:
☑ Text and HTML files (unless body of a message)
☑ PDF documents larger than 150 KB
☑ Images larger than 300 KB
☐ Images in HTML layouts of incoming messages (if possible)

☑ Otherwise try to respect content disposition of attachments
☑ Set content disposition for outgoing mail correctly
☑ Always display full attachment names

Better Attachment Viewing Mail Attachments Iconizer displays Mail attachments as simple document icons.

A nifty solution is Mail Attachments Iconizer 2.1, a Mail plug-in that gives you extensive control over the way Mail displays attachments. Via a new Attachments section of Mail's Preferences window, you can force particular types of files to always display as icons. You can choose whether to invoke this option by file type: text and HTML, PDF documents and images larger than sizes you specify, and images in HTML e-mail. (This last option works only if images in HTML e-mail messages are included as attachments rather than as part of the HTML layout.) In addition, because Mail has a difficult time rendering PostScript documents, Mail Attachments Iconizer forces them to *always* display as icons. If you find that you want to preview a particular attachment, you can either control-click (or right-click) on its icon to view it in-line or use Quick Look.

Another option I like is to always display an attachment's full name; without Mail Attachments Iconizer, Mail shortens long file names. And now when I print messages in Mail, the messages print exactly as shown on screen—which means no more multipage printouts with PDF previews if all I wanted was the text portion of an e-mail message.



Centralized Bookmarks For people who use multiple Web browsers, AllBookmarks puts all their bookmarks in a single menu.

WEB

AllBookmarks 2.5.1

RATING: ●●●◐ **PRICE:** free **COMPANY:** Agile Web Solutions **URL:** allbrowserbookmarks.com

It's not uncommon for people to use multiple Web browsers, whether for developing Web applications, trying out new browser features, or simply logging in to various stubborn sites. But using multiple browsers makes it a hassle to organize your bookmarks—they end up strewn across your various browsers.

Although we've previously covered several inexpensive ways to manage bookmarks between browsers, a simpler—and free—way is AllBookmarks 2.5.1. This utility adds a new system-wide menu that displays a hierarchical menu of all your browsers' bookmarks, organized by browser. (AllBookmarks currently supports Safari, Camino, Firefox, Flock, and OmniWeb; the developer says that it will add Opera support in an upcoming version.) You simply choose a bookmark to open it in your default browser. Because you have instant access to each browser's bookmarks, it no longer matters where you save a bookmark.

Options include the ability to show or hide each browser's bookmarks in the menu; you can also choose to show all bookmarks grouped together instead of in browser-specific submenus. AllBookmarks can also provide access to bookmarks from the developer's own 1Password utility (●●●●◐; $30).

In my testing, AllBookmarks sorts bookmarks differently than they appear in each browser. The sorting isn't alphabetical by link name or URL, so it can be difficult to find a particular bookmark. There's also no way to open a bookmark in a browser other than the one you're currently in. Still, AllBookmarks is a useful utility. ☒

Senior Editor **Dan Frakes** is always looking for great, low-cost products. Send your thoughts on this column, or on things you'd like to see in future columns, to macgems@macworld.com.

More Mail Add-ons

For more Leopard-compatible Gems for enhancing and extending Apple's Mail e-mail client, visit macworld.com/3456.

The bulk-free scanner to de-bulk your life.

Meet the world's smallest color duplex scanner designed just for the Mac.

With a footprint that's half the size of a sheet of paper, the Fujitsu ScanSnap S300M will cut your workload—and your desktop clutter—down to size. The ScanSnap S300M has an automatic document feeder that holds up to 10 pages and scans both sides of everything from business cards to legal-size documents at a rate of up to 8 pages per minute. Now you can convert stacks of paperwork from receipts, recipes, even a budding artist's masterpiece, into PDFs with the touch of a button. And the ScanSnap S300M is Leopard compatible, with a choice of AC adapter or portable USB power so you can stay organized no matter where life takes you. Learn more about our Mac-compatible scanners at **http://us.fujitsu.com/scanners/963M or call 1-888-425-8228.**

ScanSnap S510M

ScanSnap S300M • AC adapter and USB power settings • Scans paper sizes from 2 x 2 inches up to Legal length • Automatic document feeder holds up to 10 pages • One button scanning to PDF and JPEG • Scans at speeds up to 8 pages per minute • Automatic color, de-skew, orientation and blank page removal • Bundled with Cardiris™ business card software • Includes Leopard compatibility • Duplex color up to 600dpi • Less than 3.1 lbs. • Only $295

Mac Universal

ScanSnap

Advance EXCHANGE

CDW MacConnection MacMall Insight

FUJITSU

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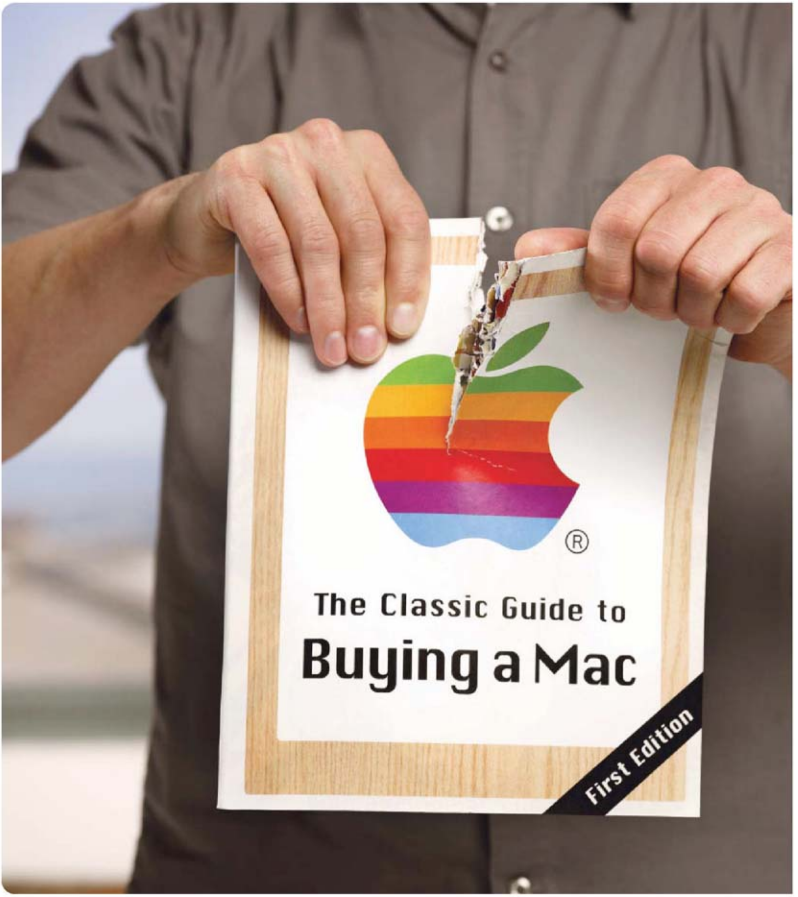

The Classic Guide to
Buying a Mac
First Edition

THINK YOU KNOW WHAT KIND OF MAC YOU NEED?

THE NEW RULES FOR BUYING A MAC

The world has a lot of unwritten rules: In social etiquette. In baseball. And in buying computers. For years, we have unquestioningly followed numerous unwritten rules when buying a Mac. Like many customs, these rules were once based on a foundation of facts and reason. But in the past few years, many longstanding Mac truths have been upended. All Macs run on multiple-core Intel processors now. iMacs are no longer hobbled by crippling feature limitations. And speedy external peripherals have drastically lessened the need for add-on cards.

In other words, the old rules no longer apply. If you're planning on buying a new Mac, you need facts about the modern lineup—so you can choose the computer that's right for you.

In this article, we take a look at some common assumptions and explain whether they align with today's realities.

Ready to change the way you shop for a Mac? Read on.

BY JONATHAN SEFF AND JASON SNELL

PHOTOGRAPHY BY PETER BELANGER

WE BUST THE MOST COMMON SHOPPING MYTHS. →

OLD RULE I'm a power user; therefore, I need a Mac Pro.

For years, Apple's high-end Power Mac desktop systems were a great—and perhaps the only—choice for a wide variety of Mac users. Many *Macworld* editors, for example, would never have considered anything less when buying a new Mac. Power Macs had the fastest processor speeds and internal architectures, not to mention space for lots of RAM, hard drives, and expansion cards.

Even when the iMac made its debut, it wasn't a computer that serious power users could consider—the first iMacs offered the sort of limited power you'd find in a Mac laptop. But as the Mac entered the Intel era and the Power Mac became the Mac Pro, something interesting happened: those lower-end systems became powerful in their own right, down to the dual-core technology that was previously the provenance of the highest-end machines. There's still a gap between high- and lower-end Macs, but now almost every Mac is suitable for general use, even by a wide swath of power users.

In the meantime, Apple has started aiming the Mac Pro at a much narrower—and higher-end—group of users. Its four- and eight-core processor architectures are ideal for 3-D rendering and scientific applications. But they won't help you build a presentation or write an e-mail message any faster.

Of course, there are speed differences across Apple's product lines. The Mac models that lack dedicated graphics processors—Mac minis, MacBooks, and MacBook Airs—offer a fraction of the 3-D performance of other Mac systems, making them unsuitable for fast action games with intensive graphics. And the eight-core 2.8GHz Mac Pro ran Speedmark almost three times as fast as the slowest Intel Mac, the MacBook Air.

But for most mainstay applications, the high-end iMac and MacBook Pro models are plenty fast. Even Adobe Photoshop, a heavy-duty program that conventional wisdom has long argued should be run only on a high-end system, works acceptably well on just about any Mac (unless you're editing gigantic files).

And there are a few other reasons to consider an iMac instead of a Mac Pro: the Mac Pro is a large computer that also requires an external display, while the iMac fits into smaller spaces and requires fewer cables than the Mac Pro; and the iMac is much quieter than the Mac Pro, so people who are sensitive to noise will prefer the iMac.

The New Rule For many power users who once bought a Power Mac by default, the Mac Pro is overkill, and an iMac or a MacBook Pro is powerful enough. The Mac Pro does exist for a reason—as an option for people who need the utmost from a Mac, particularly to perform tasks that can take advantage

HOW WE TESTED

Throughout this story, you'll find scorecards for each of the six Mac model lines.

Performance Scores In addition to our standard Speedmark 5 test scores (macworld.com/speedmark), updated for OS X 10.5.2, we've included Professional Applications, Multimedia, and General Productivity scores derived from the 17 tasks that make up Speedmark (these scores are relative to those of the eight-core 2.8GHz Mac Pro, which was assigned a score of 4) for each standard configuration. Our Professional Applications score comprises results from Adobe Photoshop, Compressor, and Maxon Cinema 4D. Our Multimedia score comprises results from iTunes, iMovie, iPhoto, Unreal Tournament, and HandBrake. Our General Productivity score comprises results from the Finder, Pages, Camino, and Microsoft Office 2004 (go to macworld.com/3500 for complete test results).

Value GREAT | Expandability FAIR | Portability FAIR

Subjective Ratings Lastly, we rated each line in terms of value, portability, and expandability on a scale of Poor, Fair, Good, and Great.

MAC MINI

The Mac mini is Apple's smallest and least-expensive Mac model, and it's the only one that doesn't include a keyboard, mouse, and display. The latest Mac mini models have made some impressive strides in performance, without gaining bulk or higher price tags. They're still a great bargain. The Mac mini's size and price allow it to fit into spaces and budgets that other Macs cannot. While the 2GHz model is the top performer, the 1.83GHz Mac mini still provides a lot of bang for the buck, as long as you don't need to burn DVDs.

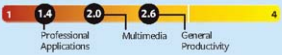
GOOD FOR Budget-conscious folks; toe-dipping Windows switchers; users who want a desktop Mac but already have a keyboard, mouse, and external display handy; people looking for an inexpensive server.

BAD FOR People who don't already have an external display; power-hungry users; gamers.

Value GREAT | Expandability FAIR | Portability FAIR

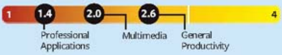
1.83GHz 🖱🖱🖱🖱 $599

SPEEDMARK: **160**



2GHz 🖱🖱🖱🖱 $799

SPEEDMARK: **167**



of four or eight processor cores. If you're performing intense scientific calculations, capturing and editing uncompressed HD video aided by the latest PCIe card, or connecting six displays to a single computer, a Mac Pro is a great choice. But if you're buying a Mac Pro rather than an iMac purely out of pride, we offer this advice: Don't.

OLD RULE I need a Mac Pro because it's the only expandable Mac, and I need an upgrade path.

For many computer users, expandability is a little like insurance. What if you want to add a hard drive? Or a new video card? Or more RAM? Or a faster processor? If your computer is truly expandable, you can theoretically stave off obsolescence with a series of canny upgrades over its lifetime. But most people don't really take advantage of their computers' expandability—especially the unique form of expandability the Mac Pro offers.

The Mac Pro is the only Mac with a traditional open-case design, offering easy access to internal hard drives and a panoply of expansion-card slots.

But these days, you can attach most peripherals via a Mac's USB, FireWire, and Ethernet ports—including speedy external storage devices and plug-in TV-capture hardware. It's extremely easy to install a new hard drive in a MacBook, and installing RAM in most Macs is also quite simple.

If you're a Windows PC user switching to the Mac, you may assume that you want a Mac Pro because it's more flexible in terms of upgrades. You can upgrade a PC's graphics card, its hard drive, and even its processor and motherboard relatively easily. But on the Mac, those sorts of upgrades are much less common. You can't just replace a Mac's processor the way you can a PC's, there aren't as many Mac-compatible video cards out there, and Macs have never had the sort of "build your own" following that cheap PCs have.

The New Rule Unless you expect a serious need for expansion cards in the future, you don't have to spend the extra cash on a Mac Pro.

THE MAC PRO IS NOW OVERKILL FOR MOST USERS, BUT IT SERVES AN IMPORTANT ROLE FOR HIGH-END NEEDS.

SHOPPING ADVICE

Once you've decided which Mac best meets your needs, you're only halfway finished. You'll also need to decide where you'll get it and what you should add to your base purchase to make it the Mac for you.

Where to Buy

You have many choices to consider when you're shopping for a Mac.

Apple Retail Stores Apple has made a massive retail push in recent years—both online and with its brick-and-mortar Apple Stores. And shopping with Apple has its advantages. An Apple Store lets you test-drive the computers you're interested in. And if you want more information, the well-trained Apple Store salespeople can provide it. It's worth remembering, however, that Apple Stores don't carry all third-party peripherals and software. (Visit www.apple.com/retail to see if there's a store near you.)

Apple.com Shopping with the online Apple Store has its advantages, too. People who preorder items from the virtual Apple Store as soon as those items are announced are likely to receive them before they're available from other online outlets. Apple.com is the only place to order a custom-configured Mac. Also, the online Apple Store offers refurbished Macs at a savings of $200 to $400 on current models, and you can save even more on previous-generation computers. These Macs come with the same warranty as new Macs, and you can extend support for them with AppleCare, making them a good alternative if you don't need the latest model or would like to get a little more computer for your money (as long as you don't mind the fact that these systems once had something

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iMAC

The iMac is a powerful all-in-one system with a sleek design and a small footprint. The most distinctive changes in the latest update to the iMac line are on the outside: it now sports an aluminum enclosure that resembles what you might see on the Mac Pro or MacBook Pro, as well as a glossy glass screen. Other changes are more modest—processor speeds now top out at 2.4GHz, instead of 2.16GHz. But all current iMacs feature a FireWire 800 port and can support up to 4GB of RAM.

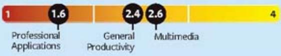
GOOD FOR A broad range of typical Mac users; people who like to watch TV and movies on their computers.

BAD FOR People who need to use expansion cards; hard-core gamers.

Value	Expandability	Portability
GREAT	FAIR	FAIR

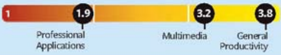
2GHz 20-INCH 🖱🖱🖱🖱 $1,199

SPEEDMARK: **204**



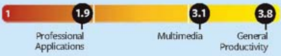
2.4GHz 20-INCH 🖱🖱🖱🖱 $1,499

SPEEDMARK: **239**



2.4GHz 24-INCH 🖱🖱🖱🖱½ $1,799

SPEEDMARK: **238**



Other configurations: 2.8GHz 24-inch

OLD RULE I need a really fast Mac so I can run Windows.

Back in the PowerPC days, you needed a superfast Mac just to run Windows at painfully slow speeds via emulation software. One major benefit of Apple's switch to Intel processors is that now you can run Windows at full speed on any Mac, via Apple's free Boot Camp software.

However, if you want the goodness of OS X right alongside your favorite Windows programs, you'll need to use virtualization software, such as Parallels Desktop (🖱🖱🖱🖱; $80; macworld.com/2930) or VMware Fusion (🖱🖱🖱🖱; $80; macworld.com/3116). (For more on running Windows on your Mac, see "Best of Both Worlds," page 66.) When you run OS X and Windows simultaneously, your Mac needs more power—and more RAM. In fact, we'd go so far as to say that your Mac's total RAM is a more important factor than the processor in running Windows virtualization software. (But the processor does help.)

That said, all current Mac models can run Windows fast enough for light to medium usage. Even the MacBook Air can run Windows decently, thanks to its 2GB of RAM.

The New Rule If you spend a lot of time running Windows via virtualization software, you'll probably want a more powerful Mac, and you'll definitely want lots of RAM. To play complicated 3-D Windows games, you'll need Boot Camp and a decent graphics processor—integrated graphics won't do the trick. But if you just want to run a few standard Windows pro-

PHOTOGRAPHS COURTESY OF APPLE

SHOPPING ADVICE

CONTINUED FROM PAGE 59

wrong enough with them to require their exchange).

Everywhere Else Apple tightly controls the price of its computers, so you won't get a substantial savings by shopping elsewhere—but some discounts do exist. For example, you may save just $5 when you buy a MacBook at Amazon.com, but as we wrote this, Amazon.com was offering a $75 rebate on that computer, as well as a 24 percent discount on AppleCare for the MacBook.

Some online stores also offer free RAM upgrades, software, or printers when you buy a new Mac (free, that is, after you send in mail-in rebates, as with the Amazon.com deal).

For people who want a new Mac *today* and don't have an Apple Store nearby, stores such as Best Buy and Fry's carry them (just be sure to do your homework before you go, since the staff probably won't be as knowledgeable about Macs as the staff at an Apple Store). And while many Apple Authorized Resellers have disappeared, thanks to Apple's efforts in the retail space, there are still some that offer great service and support.

Beyond the Basics

Choosing the Mac you want is the most important decision you'll make, but it's not the only one. You'll also want to mull over many enhancements and add-ons.

Monitor, Keyboard, and Mouse If you've purchased a Mac mini, you need everything that attaches to it, while only a monitor is a necessity with a Mac Pro. However, any Mac you buy may benefit from a keyboard, mouse, and monitor—yes, even a laptop that you use as your primary computer at home. Not everyone cares for the feel of Apple's Mighty Mouse or its

grams on your Mac, you can choose any Mac, as long as it's got sufficient RAM.

OLD RULE I'm a power user, so I need a desktop system, not a laptop.

In the old days, desktops had many advantages over laptops: more power; a better performance-to-price ratio; more expansion options; and the ability to have a large display, a full-size keyboard, and a mouse.

Today, Apple's Mac mini and iMac lines use the same "portable" versions of Intel processors and RAM as Apple's MacBook lines, so processor speed is no longer the deciding factor it was. The standard iMac configurations top out at 2.4GHz—the same as the higher-end MacBooks and the entry-level MacBook Pro. And both Mac mini models run slower than any MacBook or MacBook Pro (but not the MacBook Air).

It's still true that you pay more for a laptop than for a similar desktop (that 2.4GHz MacBook Pro costs $1,999, compared with $1,499 for an iMac that has the same processor speed). Although the iMacs pack a lot of complicated electrical components into a small space, the MacBooks are even smaller, and they have to be built to conserve power because they must use a battery.

Cost aside, the only reason to choose a desktop Mac over a laptop is if you're never going to want to use your Mac anywhere but where you've parked it. If you've ever wished you could take your Mac with you, whether it's to your couch or across the globe, a laptop can give you flexibility that no desktop system can.

And when you do want to work at a desk, Apple's laptops can do that, too. The MacBook and MacBook Air can drive external displays as large as 1,920 by 1,200 pixels—so they can run one of Apple's 23-inch Cinema Displays. The MacBook Pro is even more impressive, with the ability to power displays as large as 2,560 by 1,600 pixels—including Apple's massive 30-inch Cinema Display. And the 17-inch MacBook Pro's screen is so big that you might not even need to invest in an external display.

The same goes for input devices and expansion options. It's easy to con-

MAC PRO

With up to eight cores of processing goodness, the Mac Pro is Apple's top-of-the-line desktop workhorse. If you simply want the fastest Mac you've ever used, the base-model eight-core 2.8GHz Mac Pro won't disappoint. If you're a content-creating professional who needs a video, audio, and imaging workstation to fulfill its true potential, you may also opt to spend the extra cash to upgrade your new Mac Pro's processor speed, storage, and RAM.

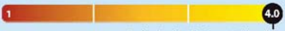
GOOD FOR Research, science, and high-end audio and video users; hard-core gamers.

BAD FOR Anyone on a budget; anyone with space constraints.

Value FAIR | **Expandability** GREAT | **Portability** POOR

8-CORE 2.8GHz ●●●●½ $2,799

SPEEDMARK: **301**



Professional Applications, Multimedia, and General Productivity

Other configurations: 2.8GHz (4-core); 3GHz (8-core); 3.2GHz (8-core)

ultrathin keyboard. If you don't, consider third-party input devices. And while Apple's displays are beautiful, they're often pricier than the competition's.

RAM A RAM-starved Mac will slow down as OS X uses the computer's hard drive for storing data that could otherwise be stored in available RAM. Also, programs such as Photoshop consume RAM like it's going out of style. So it's a good idea to have as much RAM as you can afford.

In most cases, you'll find that RAM is more reasonably priced if you purchase it from someone other than Apple. Although it's convenient to have Apple install RAM at the factory, it's more expensive, and installing or replacing RAM in most Mac models is easy enough for most users. RAM dealers such as Crucial (www.crucial.com) and Other World Computing (eshop.macsales.com) sell quality RAM at prices that almost always beat Apple's by a wide margin. You can max out most Macs (except the MacBook Air, which comes with 2GB and stays at 2GB, and the Mac Pro, which takes lots of expensive RAM) for less than $100, and this is a good place to drop a little extra money.

Hard Drive If you're going to deal with a lot of media files, adding storage to your Mac makes sense. And you'll certainly need to add a drive if you intend to use Leopard's Time Machine backup utility.

Apple offers the option of purchasing many of its computer models with higher-capacity hard drives. Some shoppers may balk when they realize that Apple's prices are higher than those of third parties, but in the case of the MacBook Pro, iMac, and Mac mini, you're better off sucking up the expense than doing it yourself. Cracking open these sealed computers is not easy. Upgrading a Mac Pro's hard drive (or installing additional hard drives) is a piece of cake, however—definitely shop

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IF YOU'RE A MAC'S ONLY USER, IT GENERALLY MAKES SENSE FOR THAT MAC TO BE A LAPTOP.

nect an external keyboard and mouse via USB, or even wirelessly via Bluetooth (now standard on every Mac portable), so you can have a full desktop experience with your Mac laptop. And the MacBook line's external ports (USB, FireWire 400 on all but the MacBook Air, and FireWire 800 and ExpressCard on the MacBook Pro) can address most add-on needs, including storage and wireless data transfer.

The New Rule Unless you're on a strict budget or you plan on using your Mac only at your desk, you can seriously consider buying a Mac laptop.

OLD RULE I need a desktop Mac for serious work, and a laptop for travel.

If you share your home Mac with family members, they probably won't want you to take off with that Mac whenever you go on a business trip. But if you're a Mac's only user, it generally makes sense for that Mac to be a laptop. With a single system, there's no hassle with synchronizing data back and forth between a desktop and a laptop. At your desk, you can plug in to an external monitor, keyboard, and mouse, but you're still only a few cords away from complete portability.

So is a laptop that you can take on the road powerful enough to be your one and

MAC LINEUP COMPARED

	PRICE	RATING	DISPLAY SIZE	RAM/MAXIMUM RAM	FIREWIRE 400 PORTS	FIREWIRE 800 PORTS	USB 2.0 PORTS*	HARD DRIVE
DESKTOPS								
iMac Core 2 Duo/2GHz	$1,199	🖱🖱🖱🖱	20-inch	1GB/4GB	1	1	5	250GB 7,200-rpm Serial ATA
iMac Core 2 Duo/2.4GHz	$1,499	🖱🖱🖱🖱	20-inch	1GB/4GB	1	1	5	320GB 7,200-rpm Serial ATA
iMac Core 2 Duo/2.4GHz	$1,799	🖱🖱🖱🖱½	24-inch	1GB/4GB	1	1	5	320GB 7,200-rpm Serial ATA
Mac mini Core 2 Duo/1.83GHz	$599	🖱🖱🖱🖱	N/A	1GB/2GB	1	0	4	80GB 5,400-rpm Serial ATA
Mac mini Core 2 Duo/2GHz	$799	🖱🖱🖱🖱	N/A	1GB/2GB	1	0	4	120GB 5,400-rpm Serial ATA
Mac Pro Xeon two quad-core/2.8GHz	$2,799	🖱🖱🖱🖱½	N/A	2GB/32GB	2	2	7	320GB 7,200-rpm Serial ATA
LAPTOPS								
MacBook Core 2 Duo/2.1GHz	$1,099	🖱🖱🖱🖱	13.3-inch	1GB/4GB	1	0	2	120GB 5,400-rpm Serial ATA
MacBook Core 2 Duo/2.4GHz (white)	$1,299	🖱🖱🖱🖱½	13.3-inch	2GB/4GB	1	0	2	160GB 5,400-rpm Serial ATA
MacBook Core 2 Duo/2.4GHz (black)	$1,499	🖱🖱🖱🖱½	13.3-inch	2GB/4GB	1	0	2	250GB 5,400-rpm Serial ATA
MacBook Air Core 2 Duo/1.6GHz	$1,799	🖱🖱🖱½	13.3-inch	2GB/2GB	0	0	1	80GB 4,200-rpm Parallel ATA
MacBook Pro Core 2 Duo/2.4GHz	$1,999	🖱🖱🖱🖱½	15.4-inch	2GB/4GB	1	1	2	200GB 5,400-rpm Serial ATA
MacBook Pro Core 2 Duo/2.5GHz	$2,499	🖱🖱🖱🖱½	15.4-inch	2GB/4GB	1	1	3	250GB 5,400-rpm Serial ATA
MacBook Pro Core 2 Duo/2.5GHz	$2,799	🖱🖱🖱🖱½	17-inch	2GB/4GB	1	1	3	250GB 5,400-rpm Serial ATA

N/A – not applicable. *Number includes two USB 2.0 ports on the keyboard. *Typing in find codes after *macworld/* directs you to a product's review or overview. For example, macworld.com/2489 contains an overview of the 2.66GHz Mac Pro.

only Mac? If you need to take your Mac with you often, especially on airplanes with small tray tables and little personal space, a scale-tipping 6.8-pound 17-inch MacBook Pro won't be ideal. A MacBook or a MacBook Air makes for much easier transport—but it may not provide the power you need in a single system. A 15-inch MacBook Pro, which is 1.2 pounds lighter and less deep and wide than its 17-inch sibling, can be a good compromise between power and portability.

The New Rule Mac laptops are fast and flexible. If you need more power than a laptop can provide, or if your desktop Mac serves more than one person, a two-Mac solution might be a better bet.

OLD RULE Macs are just as expensive as they've always been if you want good performance.

If you're like some of us, each of your Mac purchases has caused a financial dent of about $2,500. That's because a midrange professional tower was, for a long time, the sweet spot when it came to a powerful Mac you could count on. Thankfully, those days are gone. A 2.4GHz iMac costs $1,499 (with a 20-inch display) or $1,799 (with a 24-inch display), and it's as fast as or faster than most Power Macs you might be upgrading from. People who are

MACBOOK AIR

The wafer-thin MacBook Air sacrifices power and features for size, weight, and portability. Judged merely on its technological specifications, the Air can't measure up to Apple's other laptops. But for people who factor size, weight, and style into the equation, the Air makes more sense. Is losing several hundred megahertz, dozens of gigabytes of hard-drive space, an internal optical drive, and FireWire connectivity worth losing two pounds? Each laptop user will have to answer that question for himself or herself.

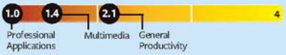
GOOD FOR Frequent travelers; people who want the lightest laptop possible; users without high-end performance needs.

BAD FOR Performance hounds; anyone who needs lots of disk space; anyone who frequently uses a CD/DVD drive; the budget conscious; long-haul travelers.

Value **FAIR** | Expandability **POOR** | Portability **GREAT**

1.6GHz ●●●½ $1,799

SPEEDMARK: **121**



Other configurations: 1.8GHz

OPTICAL DRIVE	ETHERNET	GRAPHICS	SYSTEM BUS	BUILT-IN iSIGHT?	FIND CODE[1]
Slot-loading 8x SuperDrive	Gigabit	ATI Radeon HD 2400 XT (128MB)	800MHz	yes	3029
Slot-loading 8x SuperDrive	Gigabit	ATI Radeon HD 2600 Pro (256MB)	800MHz	yes	3028
Slot-loading 8x SuperDrive	Gigabit	ATI Radeon HD 2600 Pro (256MB)	800MHz	yes	3027
Slot-loading 24x Combo drive	Gigabit	Intel GMA 950 (64MB shared with main memory)	667MHz	no	3030
Slot-loading 8x SuperDrive	Gigabit	Intel GMA 950 (64MB shared with main memory)	667MHz	no	3031
16x SuperDrive	Gigabit (two)	ATI Radeon HD 2600 XT (256MB with two dual-link DVI ports)	dual-1,600MHz	no	3363
Slot-loading 24x Combo drive	Gigabit	Intel GMA X3100 (144MB shared with main memory)	800MHz	yes	3464
Slot-loading 8x SuperDrive	Gigabit	Intel GMA X3100 (144MB shared with main memory)	800MHz	yes	3465
Slot-loading 8x SuperDrive	Gigabit	Intel GMA X3100 (144MB shared with main memory)	800MHz	yes	3466
Optional external 8x SuperDrive	Optional external 10/100Base-T	Intel GMA X3100 (144MB shared with main memory)	800MHz	yes	3364
Slot-loading 8x SuperDrive	Gigabit	Nvidia GeForce 8600M GT (256MB with dual-link DVI support)	800MHz	yes	3467
Slot-loading 8x SuperDrive	Gigabit	Nvidia GeForce 8600M GT (512MB with dual-link DVI support)	800MHz	yes	3468
Slot-loading 8x SuperDrive	Gigabit	Nvidia GeForce 8600M GT (512MB with dual-link DVI support)	800MHz	yes	3469

MACBOOK

The MacBook is a relatively inexpensive portable that lacks some features but performs well in most cases. The latest generation of the Core 2 Duo processor is the highlight of this round of MacBook updates. The processor upgrade delivers faster speeds than the previous generation, but it has less shared L2 cache (3MB, compared with 4MB in the previous generation). Hard-drive capacities have also jumped—this line now offers a minimum of 120GB of storage. And both 2.4GHz MacBooks ship with 2GB of memory installed.

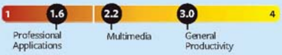
GOOD FOR People looking for a light laptop that's a good value.

BAD FOR People who heavily edit video or audio; people who need lots of screen real estate; gamers.

Value GREAT | **Expandability** GOOD | **Portability** GREAT

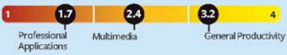
2.1GHz ★★★★ $1,099

SPEEDMARK: **180**



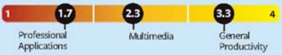
2.4GHz (WHITE) ★★★★½ $1,299

SPEEDMARK: **193**



2.4GHz (BLACK) ★★★★½ $1,499

SPEEDMARK: **196**



considering leaving the Windows world, who often assume that the tower-shaped Mac is the only choice for them, no longer need to fear that high prices will be an insurmountable barrier to buying a Mac.

The New Rule Although prices for Apple's various models have stayed roughly the same over time, the performance of lower-priced systems has improved dramatically. But it's not just that you get more Mac for your money than ever before—it's also that the differences between the various Mac lines have diminished. If you still need all the power Apple has to offer, however, you probably won't see any savings now. A quad-core Mac Pro—the least robust of the bunch—will run you $2,299, whereas the slowest eight-core system starts at $2,799.

OLD RULE I need a large, nonglossy display for video and photo work.

True, a 13-inch MacBook screen may be a bit small when it comes to Photoshop's and Final Cut Pro's glut of palettes and windows. And sure, some users don't like the glossy screens that are mandatory on the MacBook and MacBook Air. But all Mac laptops can connect to the large external display of your choice. So unless you're always working on-the-go, even a MacBook will serve your display needs (and as a bonus, you can toss it in your bag when you need to).

The New Rule If you're doing high-end work with a laptop, you've probably

SHOPPING ADVICE

CONTINUED FROM PAGE 61

around for internal 3.5-inch SATA drives priced less than the drives Apple offers. And it couldn't be easier to install a replacement 2.5-inch SATA drive in the MacBook via its battery bay (see macworld.com/3489).

And all Macs can connect to external hard drives via either a USB 2.0 port or a FireWire port (if it's present). For people with desktop Macs other than the Mac Pro, expanding storage through an external drive is the easiest and most cost-effective way to go. Additional storage for your laptop is a bit more problematic in that it, too, may need to be portable (if you intend to take it with you). Thankfully, you can purchase a portable hard drive, or you can build your own with a portable drive enclosure and a 2.5-inch hard drive from a company such as Other World Computing, WiebeTech (www.wiebetech.com), and Transintl (www.transintl.com). Faster-spinning hard drives perform better but typically cost more; however, if you're capturing video, for example, the increased rotational speed will come in handy.

AppleCare You can extend Apple's support and repair period from the included one year to three years by purchasing an AppleCare Protection Plan for your computer. Priced between $149 (for the Mac mini) and $349 (for the MacBook Pro), AppleCare is a worthwhile safety net. Motherboards and display replacements can be very pricey—close to the computer's original cost—and if one of these expensive items goes kaput during the second or third year of coverage, you'll be happy you took the AppleCare precaution. (You don't have to purchase AppleCare when you buy your Mac—you can add it at any time during the first year.)

AppleCare
Protection Plan

Printer As popular as PDF files are, we haven't yet achieved a paperless world. Whether it's photos, invoices, or homework assignments, chances are you'll want to print *something* with your Mac—so you'll need a got a nice desktop display to connect it to when you're at home or in the office. If you're bothered by a small, glossy screen *and* you'll be doing most or all of your computing away from home, you may want to opt for a 17-inch MacBook Pro.

The Last Word

Which Mac should you buy? That's an awfully personal question, and it depends entirely on who you are. If you're using powerful programs to do professional-level work in the graphics, video, or scientific world, the Mac Pro was designed for you.

But for most people, even those who consider themselves power users, we strongly suggest an iMac rather than a Mac Pro. As Apple has improved the Mac Pro's specs, it has added features once considered "pro level" to the iMac line. If you've never considered buying an iMac, it's time to take a closer look at its dual-core processors, high RAM ceiling, abundance of speedy USB and FireWire ports, and support for external monitors.

We also strongly feel that potential Mac buyers should give Apple's MacBook family some serious consideration. With the Mac's transition to Intel processors, Apple's laptops have gained power they never had before—they work well on your desk and give you the benefit of portability. Not everyone will opt for a laptop, but a MacBook is all the Mac that many users will ever need. ☒

Jonathan Seff is *Macworld*'s senior news editor; **Jason Snell** is *Macworld*'s editorial director.

MACBOOK PRO

The MacBook Pro is the desktop you can take with you, and it has the expansion options you're most likely to actually use. Like the MacBooks, the newest models in the MacBook Pro line have the latest generation of Core 2 Duo chips. That boosts the amount of L2 cache to 6MB on the 2.5GHz models (though the cache drops to 3MB on the 2.4GHz model). The MacBook Pro also has the Multi-Touch trackpad, introduced in the MacBook Air.

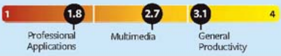
GOOD FOR People looking for a portable Mac with no performance compromises.

BAD FOR People on a budget; people who prefer smaller, lighter laptops.

Value **GOOD** | Expandability **FAIR** | Portability **GOOD**

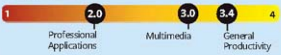
2.4GHz 15.4-INCH ★★★★½ $1,999

SPEEDMARK: **204**



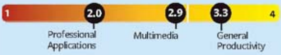
2.5GHz 15.4-INCH ★★★★½ $2,499

SPEEDMARK: **222**



2.5GHz 17-INCH ★★★★½ $2,799

SPEEDMARK: **219**



Other configurations: 2.6GHz (15.4-inch or 17-inch)

printer. Apple routinely offers a rebate on some printers (currently up to $100) when you purchase one at the same time as your Mac. You'll not only save money when shopping but also have the assurance that the printer is compatible with your new Mac.

USB Hub Today's computers are tied to a host of peripherals—printers, scanners, audio interfaces, cameras, input devices, iPods, external storage devices, and more. So it doesn't take long to fill your computer's USB ports. If you've got an expansive peripherals plan, you should purchase a USB 2.0 hub. Powered hubs (which must be plugged into an outlet) are preferable to hubs that pull power from your computer's USB port, because they have enough power to drive any USB peripheral you attach to them. Unpowered hubs do not.

Software All Macs ship with enough software to get you started and then some. But these tools may not be enough. Be sure to calculate the price of the software you need to get important tasks done—$400 for Microsoft Office 2008 or $79 for Apple's iWork, for example.

Connectivity The days when the Internet was optional are over. Updates to Mac OS and the software you run on your computer will come via the Internet, as will your e-mail and, most likely, an increasing amount of your news and entertainment. All Macs except the Mac Pro include wireless networking as standard equipment, and all but the MacBook Air carry at least one Ethernet port. If you haven't plumbed your home or office for Internet access, now is the time. And while you're at it, add a router (a wireless one if you're purchasing a laptop) to the mix. Laptop users should also consider a 3G wireless card (either the USB or the ExpressCard flavor) and an accompanying data plan so they never have to be out of the Net's reach.—CHRISTOPHER BREEN

Finder
File
Edit
View
Go
Window
Help

How to make Mac OS X

Tue 1:14 PM
mac hd

Best of BOTH Worlds

By now, you know that—thanks to Intel chips in Macs and software such as Parallels Desktop, VMware Fusion, and Apple's own Boot Camp—you can run Windows software on your Mac.

But you may *not* know the answers to a bunch of other related questions: Why would you want to put Windows on your Mac in the first place? Which Windows programs are compelling and unique enough to justify the hassle of putting Windows on your Mac? Can you really incorporate those programs smoothly into your Mac workflow, or will they always feel clunky? In other words, while putting Windows on your Mac might sound great in theory, how does it all work out in reality?

and Windows live in perfect harmony

For some answers to those questions, read on. We've got advice on how to prepare your Mac for Windows, how to set up Windows itself, and how to efficiently run Windows applications side-by-side with your Mac-native software. We've also got an update on the latest versions of Parallels and Fusion, as well as recommendations on great Windows applications that don't really have good Mac alternatives. Maybe you know some of this already. We bet you don't know it all.

BY ROB GRIFFITHS ILLUSTRATIONS BY CHRIS PHILPOT

Configuring Your Hardware

Obviously, only Intel-powered Macs can run VMware Fusion (●●●●; $80; macworld.com/3116) or Parallels Desktop (●●●●; $80; macworld.com/2930). Both will run just fine on anything from the first Core Solo–powered mini to the newest eight-core Mac Pros.

Neither program specifies a minimum clock speed, but—no surprise—the faster your Mac, the better your Windows experience will be. That said, even my original 1.66GHz Core Duo Mac mini does fine running basic applications (such as Microsoft Office), in both Parallels and Fusion.

While each application will run with as little as 512MB of RAM, each prefers 1GB, and if you want the best Windows XP experience possible, you'll need 2GB; if you're running Windows Vista, 3GB is preferable.

As for disk space, you'll need to set aside at least 2GB on your hard drive for Windows XP, but that's just for the operating system itself. You'll also need to make room for any Windows applications you install and any data files they generate. Vista requires, at a minimum, 15GB of disk space, but its documentation recommends 40GB.

Picking the Right Windows

Vista is the official current version of Windows. But you can still find Windows XP for sale out there; until very recently, XP Pro was what I always installed on my Macs.

If you want to stick with the official current version of Windows, you can get Vista in Basic, Home Premium, Business, and Ultimate editions. Microsoft provides a comparison table (macworld.com/3459) that makes it easy to choose the right version.

Basic is too bare-bones to consider. For a home user, Home Premium is an affordable yet reasonably powerful option. For office users, Business is the logical choice. If you're the type who simply must have the best of everything, go for Ultimate. For my needs, Business—with its comparatively full feature set and affordable upgrade cost—works just fine.

No matter which version of Vista you choose, you'll probably run into some of its well-publicized annoyances. Our sister publication, *PC World*, did a good job of summarizing them and providing some workarounds—including one for the annoyingly persistent User Access Control dialog boxes (macworld.com/3460). Neither Fusion nor Parallels currently supports Vista's resource-intensive Aero visual effects. This is actually a good thing, because it reduces the load on your system.

My Computer

Parallels versus Fusion

The best part of having two excellent programs that do the same thing is that the fierce competition between the two makes both of them better.

In the past year or so, Parallels has added a Coherence mode, mirrored folders, USB 2.0 support, and 3-D graphics. Similarly, between its 1.0 and 1.1.1 releases, Fusion added support for DirectX 9.0 and multiple languages, improved Boot Camp integration and iPhone syncing with Outlook, and enabled the eject key.

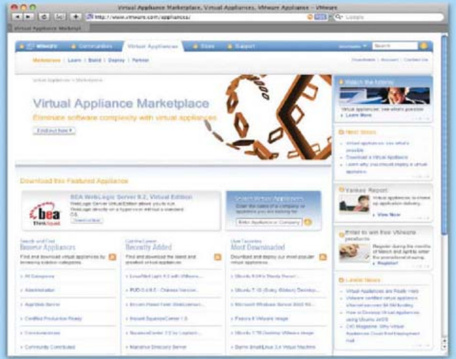
While that features race will likely continue, here's my take on where it stands right now.

Both programs can take a snapshot of your virtual setup (a good thing to do before running an upgrade, as you can then downgrade with a single click). However, Parallels' version is much nicer. Fusion allows for only one snapshot; Parallels can create any number.

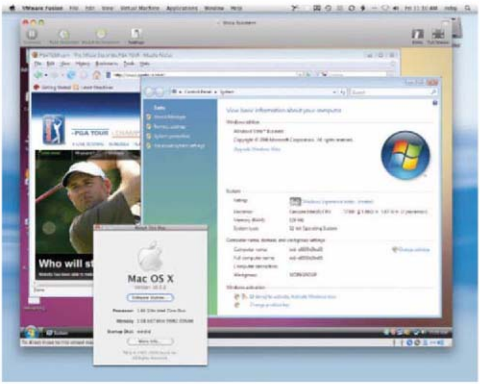
Parallels' Coherence mode works better than Fusion's Unity mode: you've got more control over what it shows; for example, when I had to resize the Windows boot drive to install Vista, Parallels made the process easier.

In Fusion's favor, if you want to use operating systems other than Windows, it has a huge collection of downloadable virtual appliances—preconfigured virtual machines that make all sorts of operating systems and applications available on your Mac. Parallels offers a similar service, but VMware's collection is substantially larger. Fusion also supports more operating systems, including 64-bit Windows and Linux, and can use both of the CPUs in the Mac's Core Duo processors. Finally, Fusion's installation is a bit cleaner than Parallels'.

Still, the choice is really a personal one. Both programs come in demo versions; try them out on your particular Mac, with your particular applications, and buy the one that best fits your needs.


Virtual Appliance Marketplace
Eliminate software complexity with virtual appliances
Download this Featured Appliance
BEA WebLogic Server 9.2, Virtual Edition
bea
Browse Appliances
Recently Added
Most Downloaded

Virtual Appliances VMware offers a huge library of virtual appliances—preconfigured virtual machines that can contain either an entire operating system or a tool designed for a particular task.



Vista on a Mini Though a Core Duo Mac mini is not the best Mac for running Windows Vista, it's surprisingly usable if you have realistic expectations.

Installing Windows

Installing Fusion or Parallels is easy. If you're installing Windows on your Mac for the first time, that's also relatively simple: Parallels and Fusion both include installation wizards that automate the process for you. Just make sure you allocate enough drive space for applications and data, as well as for the operating system itself, when you create the virtual machine. If you do, the process should be fairly painless.

If, on the other hand, you've used Fusion or Parallels before to run earlier versions of Windows, upgrading to Vista can hurt a bit.

The degree of pain will depend on the version of Windows you're upgrading from and the version of Vista you're upgrading to. Certain combinations require a clean upgrade, meaning that you'll have to wipe out all your old data. Others allow an in-place upgrade, leaving your data intact. (Unlike OS X, Vista doesn't offer a clean install that keeps users and settings.) The Upgrade Paths page at Microsoft (macworld.com/3461) explains the permutations of the problem.

For me, the biggest problem was expanding the size of my existing virtual machines (meaning the space on my hard drives devoted to Windows and its applications). I've always kept those relatively small—under 10GB—because I use only a couple of Windows applications and I don't create massive data files. But, as noted, Vista wants a lot more than that.

Tweaking Settings

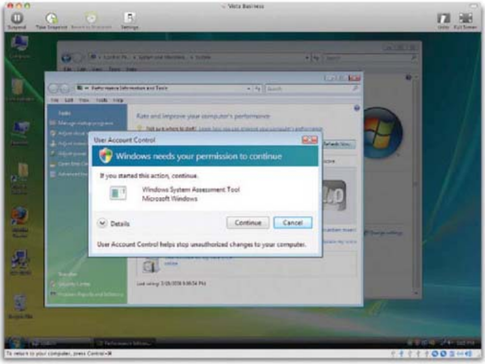
Out of the box, both Fusion and Parallels do a good job of creating virtual machines with usable default settings. But that doesn't mean you can't improve on them. Here are a few tweaks I recommend for most users.

To change settings in your Fusion virtual machine, first shut it down and then click on Settings in the toolbar. If you have an Intel Core Duo Mac, Fusion can take advantage of the dual CPUs to get better performance in processor-intensive programs. To enable dual-CPU support, go to the Processors section and click on 2 Virtual Processors. Fusion also supports accelerated 3-D graphics; enable it on the Displays tab. (Note that, for most Windows games, you're really better off using Boot Camp.) Finally, if you'd like Fusion to allocate more processing power to your Mac or to your virtual machine, you can adjust that setting in the Performance section of Fusion's Preferences.

In Parallels, with your virtual machine shut down (not just suspended), select Edit: Virtual Machine to open the Configuration Editor. To give your Mac applications more power when your virtual machine is running, select the Options resource, click on the Advanced tab, click on the Mac OS X Applications button in the Optimize section, and then click on OK. If you'd rather reserve the best performance for your Windows programs, leave this option alone.

Here's another good tweak: in the Video resource, click on the Enable DirectX Shaders button to turn on experimental accelerated graphics support. Once you've enabled this, you can run certain 3-D games and Windows applications within the virtual machine. (But again, for serious gaming, use Boot Camp.) For more help on these and other Parallels options, click on Help in the Configuration Editor window.

In Vista itself, switching to the Windows XP theme can improve performance (or at least make the OS less annoying). To do so, open the Control Panel, click on Appearance And Personalization, and then click on Change The Theme in the Personalization section. Select Windows Classic (or Windows Standard) from the pop-up menu, and then click on Apply. Finally, back in the Control Panel, click on Use Classic Windows Folders in the Folder Options section of the Appearance And Personalization page.



User Account Control

Windows needs your permission to continue

If you started this action, continue.

Windows System Assessment Tool
Microsoft Windows

User Account Control helps stop unauthorized changes to your computer.

User Access Control If you're planning on running Vista, get used to seeing this dialog box, the equivalent of the OS X authentication dialog box.

Sharing Data

Once you've tweaked the performance settings, you need to figure out where you want your Windows applications to put the files you create. You have three basic choices: you can store these files within the virtual machine itself, in a folder on your Mac that Windows can access as it would a network volume, or in a folder that your Mac and the virtual machine share.

The default is to keep the files within your virtual machine: if you do nothing, files saved from a Windows program's Save menu will end up in your user folder on the virtual C: drive.

I prefer the third option—storing data from Windows programs in a shared folder that both operating systems can "see"—for two reasons. First, space on your virtual hard drive is probably more limited than space on your Mac's hard drive. Second, if you save files to a folder outside the virtual machine, you can open them in your Mac applications. That means you could create documents in Office for Windows and then open them in Office for the Mac.

Setting up shared folders isn't hard in either Parallels or Fusion. In Parallels, choose Devices: Shared Folders: Add from within your virtual machine. A new window will appear where you can enter the name (as seen by Windows), the path, and a description. Fill in the information, click on OK, and, after a short delay, your shared folder will show up in the Network Drives section of Windows' My Computer, with a mapped drive letter.

But don't stop there. With your Parallels virtual machine shut down, open the Configuration Editor (Edit: Virtual Machine). Here you'll see options for Shared Folders, Shared Applications, and Shared Profile. Shared Folders we've discussed. Shared Applications lets Windows programs appear in

My Computer

The Killer Windows App

Microsoft Office 2007 for Windows is a very compelling reason to run Windows on a Mac.

"But wait," you say. "Doesn't Microsoft offer Office 2008 for the Mac? Why run the Windows version?" Simply put: because the Windows version can do some things the Mac version can't.

Missing Mac Programs

For starters, you might want or need one of the Windows-only applications in the suite.

Like the Mac version of Office, Office 2007 includes Word, Excel, and PowerPoint. But instead of Entourage, it includes Outlook, Microsoft's ubiquitous calendar, contact, and e-mail program.

While iCal, Entourage (or Mail), and Address Book all work reasonably well with Exchange servers, they can't do everything that Outlook can. For example, Outlook users can employ server-side mail rules and server-based meeting scheduling that automatically finds the best meeting time for all the invitees. Additionally, Outlook supports calendar overlays (which show multiple calendars side by side), attachment previews, and unified messaging (which delivers voice mail and faxes to your e-mail inbox).

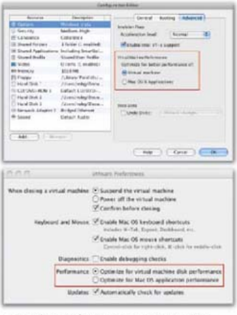
Access, Microsoft's database package, is the other major Windows-only program in Office 2007. Like FileMaker Pro, Access makes it easy to create simple databases with a few clicks. But Access is also a high-end platform that developers can use to build

Access Database Microsoft Access serves as both an easy-to-use database for nonprogrammers and a high-end tool for professionals designing databases that interact with Web servers and company systems.

OS X's Open With contextual menu; your Mac programs can also appear within Windows. Shared Profile lets Windows use your Mac's Desktop, Documents, and Pictures folders.

To set up shared folders in Fusion, click on the Settings button in the Toolbar, click on the plus-sign (+) button at the bottom of the window, and select Add Shared Folder from the pop-up menu. In the new window that appears, select Enabled and give the folder a name that will appear in Windows. Then click on the Path pop-up menu, select Choose, and locate the folder that you'd like to share in the Mac OS. Once you've found the folder, click on Open to dismiss the dialog box and then click on OK to add the folder.

To see your shared folders, click on the Network icon on the desktop and then navigate into the shared folder. If you'd like to make access even easier, map the network drive. If you're running XP, you'll find that option in Tools: Map Network Drive; in Vista, Map Network Drive is on the toolbar. Whichever one you use, click on the Browse button in the new window that appears and then drill down into the Network folder, and you'll see the shared folder you just created. Click on it once, and then click on OK and then on Finish. The shared folder should appear alongside your other folders when you browse your files.


When closing a virtual machine ● Suspend the virtual machine
○ Power off the virtual machine
☑ Confirm before closing
Keyboard and Mouse ☑ Enable Mac OS keyboard shortcuts
☑ Enable Mac OS mouse shortcuts
Diagnostics ☐ Enable debugging checks
Performance ● Optimize for virtual machine disk performance
○ Optimize for Mac OS application performance
Updates ☑ Automatically check for updates

Balancing Performance In both Parallels (top) and Fusion (bottom), you can optimize your Mac's performance to favor OS X or Windows programs.

There's one big caveat to all of this: given the number of viruses and malware programs that exist for Windows, carefully consider how much of your Mac's file structure you want to expose to Windows. I've chosen to leave most of Parallels' sharing features disabled; I share only a couple of folders (one for data files, one for images) through the Shared Folders feature. If you're going to be running Windows regularly and surfing the Web, you should certainly enable Windows' built-in malware-detection tool, and consider investing in antivirus software.

There's actually a fourth way to share data between Windows and Mac OS, but it's strictly for ad-hoc file sharing: simply drag the file or folder you would like to copy to the other operating system's window. This leaves the source object in place. If you're dragging to Mac OS, make sure that you drag it to your desktop or another Finder window, rather than to an application window.

Unfortunately, you can't drag and drop text to or from your virtual Windows session in Fusion or Parallels. You can, however, copy and paste text (though not other kinds of data) in both directions.

Working Together

If you find it jarring to move from OS X to a separate window containing your Windows world, both Parallels and Fusion provide alternatives.

First, to better differentiate between the two operating systems, you can use

professional applications. While FileMaker Pro can do many of these same things, it can't share databases with Windows users unless they have FileMaker Pro for Windows installed. (Note that Outlook and Access aren't available in all version of Office 2007.)

Missing Mac Features

Some Office programs have Windows-only features. The Windows version of Word, for instance, includes a useful version-comparison tool. It also lets you mark a document as Final before distributing it—a simple way to let readers know the document is done.

Excel 2007 sports better conditional formatting than its Mac counterpart. Instead of three levels of sorting, it offers 64. Calculated columns automatically fill as you add rows to your worksheet. The pivot-table tools in Excel 2007 are miles beyond what's available on the Mac.

Finally, the Windows version of PowerPoint has some nice features you won't get on the Mac. You can create a slide library (on a SharePoint Server) for slides you use often—the slides are linked to the library, so if you change the master, all the presentations with that slide will update. The Windows version also offers transitions and animations you won't find on the Mac side.

Missing Macros

All that said, the most significant difference between the Mac and Windows versions of Office is the latter's continued support for Visual Basic. Office Professional 2007 supports Visual Basic macros (in Word and Excel), while Office 2008 for the Mac does not.

That support means it's easier to share documents with Windows users if you're using Office 2007. It also means you can work in an office that uses them to ease data input or ensure data integrity.

You may also have minor compatibility issues if Windows users send you documents in which they've used some of the features that aren't available on the Mac. Documents that rely on Microsoft's SharePoint Server won't work at all on the Mac.

In short, if you want 100 percent Windows Office compatibility, or if you need access to applications and features not found in the Mac version of Office, you'll have to run Office 2007 for Windows.

My Computer

7 More Killer Windows Programs

While Office 2007 is probably the top Windows app for Mac users, it's not the only one you may want or need. Here are seven other reasons to install Windows on a Mac.

Internet Explorer 7

Some poorly designed sites still demand Internet Explorer (IE), and the five-year-old Mac version isn't up to the job. IE 7 (free; www.microsoft.com) can give you access to those sites. And if you're a Web site creator, you can run Windows IE in a virtual machine to see what your site will look like to the majority of the world.

Windows Media Player 11

Macs can play back Windows Media files through QuickTime, thanks to free downloadable codecs (macworld.com/3463). But Microsoft's native Windows player (free; www.microsoft.com) adds additional features that media-savvy Mac users might like. Microsoft's DRM works through Windows Media Player (WMP) and allows you to download music from some subscription services, including Rhapsody (www.rhapsody.com) and Napster (www.napster.com). And Amazon (www.amazon.com), Movielink (www.movielink.com), and others offer a range of movie downloads that you can't get on iTunes and that you *can* play in WMP.

Visio 2007

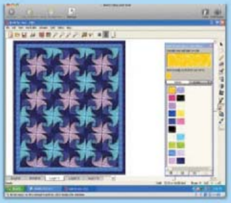
Although a few diagramming tools are available for OS X, including Omni Group's $150 OmniGraffle (🖱🖱🖱🖱½; macworld.com/0992), Visio Standard ($259; www.office.microsoft.com) is a must-have in any Windows-centric office. It has most of the same flowcharts, network diagrams, and other graphics as OmniGraffle. But its PC-only features make Visio especially useful for a team, and it also integrates well with Microsoft Office.

Quicken Home and Business

The current Mac release, Quicken 2006, handles basic home finances, but misses more-advanced options offered in the Windows edition, such as the ability to send invoices and track receivables, and comprehensive support for bonds, options, and certain other types of investments. The PC version of Quicken—Quicken Home and Business ($100; www.quicken.com)—also offers better cross-platform file compatibility and better support for online banking services.

Netflix

The Netflix online interface (www.netflix.com) works just fine in a Mac browser for managing your queue of DVDs. But the Watch Instantly movie-streaming service doesn't. At press time, PC users had access to a library of more than 7,000 streaming titles. Subscribers who pay $9 or more per month for their accounts get unlimited viewing; those who pay less can watch two hours each month. Netflix has announced plans to offer this service to Mac users, but so far hasn't offered any specifics. For now, a Windows virtual machine is your only alternative.



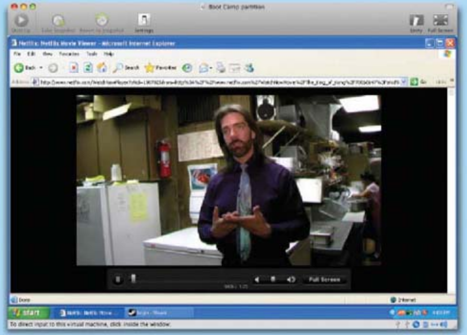
Electric Quilt 6 Just one example of the computer-assisted crafts genre, Electric Quilt lets you arrange fabric samples on screen before you sew a stitch.

Earthmate GPS LT-40 with Street Atlas USA 2008 Plus

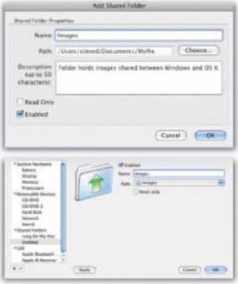
GPS hardware and software vendors have largely ignored the Mac. A few Mac-only applications—including James Associates' MacGPS Pro ($50; www.macgpspro.com) and Karen Nakamura's GPSy ($60; www.gpsy.com)—offer good waypoint and positional tracking. But if you want an all-in-one hardware-software bundle or preloaded maps, something like DeLorme's Windows-only Earthmate GPS LT-40 with Street Atlas USA 2008 Plus ($100; www.delorme.com) is a better bet. With voice-recognition input and spoken directions, it's like having your own personal navigator.

Electric Quilt 6

PC users have their choice of software for planning dressmaking, knitting, needlepoint, and other textile projects. Electric Quilt ($150; www.electricquilt.com) is just one example of the genre. It helps you design quilts by arranging fabric samples or scanned swatches. Quilters can quickly modify the pattern and layout before choosing the final design. Printed templates make the actual cutting and sewing far easier.—ZACK STERN


Boot Camp partition
Netflix: Netflix Movie Viewer - Microsoft Internet Explorer
Full Screen
start
Internet
To direct input to this virtual machine, click inside the window.

Netflix The online movie store lets you watch streaming movies over the Internet—but only if you're running Windows.



Folder holds images shared between Windows and OS X.

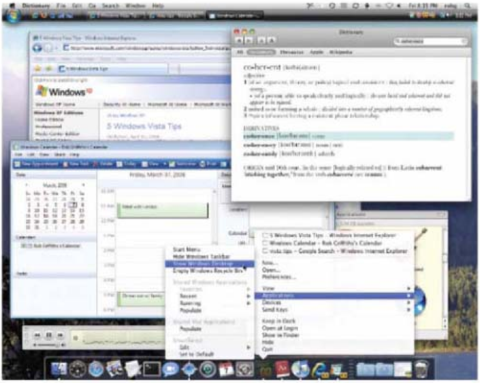
Shared Folders The Add Shared Folder dialog box in Parallels (top) and the Shared Folder setup screen in Fusion (bottom) allow you to see and use items in shared folders in both OS X and Windows.

the full-screen mode available in both Fusion and Parallels to obscure all visible evidence that you're even using a Mac—anyone walking past your cubicle will see only your Windows session on the screen. In OS X 10.5, I like to assign Fusion or Parallels to its own space in the Spaces preference pane. I can then move between the Mac and Windows operating systems by pressing control and one of the arrow keys.

If you're looking to integrate the two operating systems visually, you can have that, too. Fusion and Parallels each offer a mode that lets Windows programs and windows blend in with the rest of your OS X windows. (Parallels calls it Coherence mode; Fusion calls it Unity.) Whatever you call it, in this integrated mode the Windows desktop vanishes, and your open Windows programs appear alongside OS X applications on the desktop and in the Dock.

Printing from Windows

If you have a networked printer, printing to it from Windows in Parallels or Fusion should just work. You should be able to set up the networked printer from your virtual machine just as you would on a standalone Windows machine.



Total Integration In Parallels' Coherence mode, you'll see the Windows taskbar at the top of the screen, a mix of Windows and OS X software on screen, and Windows programs in the Dock.

Printing to a USB printer connected directly to your Mac is somewhat more complicated. Fusion and Parallels both include solutions for "capturing" your Mac's USB printer for use within Windows. Unfortunately, you won't be able to print from Mac OS at the same time, so this method is not my preferred solution.

Here's how I like to do it: in your Windows virtual machine, download and install Apple's Bonjour for Windows. As part of the installation, a Bonjour Printer Wizard icon will appear on your Windows desktop. Launch it after the installation finishes, then click on Next to get to the Shared Printers screen.

What happens next depends on your printer. If it's a newer model and Bonjour is enabled, you'll see it listed in the Shared Printers screen. Select it, click on Next, and then follow the instructions to install its drivers. When this process is done, you'll have a fully supported printer installed in Windows.

If you have an older printer, you won't see it listed. Switch back to your Mac and use the Sharing preference pane to enable Printer Sharing. Switch back to Windows, and the printer should now show up in the Shared Printers list. Select it, click on Next, and leave the driver settings at the default (Generic/PostScript or Generic/PCL).

The Final Word

That's certainly not all you need to know about running Windows programs on your Mac—not by a long shot. But many of the adjustments you make will depend on your particular system and the particular Windows software you want to run. What I've outlined here should be enough to get you started in the world of dual—not dueling—operating systems. ⊠

Rob Griffiths is a senior editor at *Macworld*.

Evade E-mail Exasperation

You've got e-mail problems. We've got answers. **BY CHRISTOPHER BREEN**

If you're like 99.7 percent of computer users, your e-mail client gets more of a workout than any other software you use. And given the amount of time you spend with this particular software, it's not surprising that minor annoyances you'd forgive in other programs become a Big Deal when you encounter them hour after hour, day after day. I've rounded up some common e-mail problems and provided solutions to help you keep them under control.

Decipher Winmail.dat Files

Most people who have used e-mail for longer than the lifespan of a fruit fly have received messages with winmail.dat attachments, which typically won't open on a Mac. The source of these files is Microsoft Outlook, Windows' omnipresent e-mail program. They're generated when an Outlook user on a PC formats the e-mail message (and any attachments) in Outlook's Rich Text Format (RTF). This is not the universal RTF we Mac users know and love; rather, it's a proprietary format that's compatible with Outlook but not with other e-mail clients. When an e-mail client other than Outlook receives the message, it finds the inscrutable winmail.dat files enclosed.

There are a couple of things you can do to get at the attachments. If you know the correspondent well enough to make the suggestion, ask that he or she send messages either as plain text or as HTML (Outlook offers both options). Either format works with the Mac (and with every other e-mail client in the universe), and attachments won't get mucked up.

Alternatively, you can deal with the issue by taking steps on your end. Just drop a winmail.dat file on a utility such as Josh Jacob's TNEF's Enough (free; macworld.com/0274), for instance, and the utility will offer to extract the file's inner goodness. You can also try Christopher Atlan's Omic ($30; macworld.com/3418), an Apple Mail plug-in that converts these files into their original, readable form, and identifies the attachments properly in a Mail message's attachments area. Note, however, that as I write this, neither of these utilities has yet been updated for Mac OS X 10.5 (Leopard).

Kick-Start a Sluggish E-mail Client

If your e-mail client runs as slow as molasses, it's likely jammed with messages. Thankfully, you can speed things up by archiving old messages and then deleting the originals, and by stripping out old attachments.

To do this in the Leopard version of Apple's Mail, create a smart mailbox that seeks out messages more than a certain number of days old. Just choose Mailbox: New Smart Mailbox and create a rule that reads `Date Received Is Not In The Last 365 Days`.

A new mailbox will appear under the Smart Mailboxes heading in the Mailboxes pane. Control-click on the smart mailbox you created and choose Archive Mailbox from the contextual menu to save the contents of that mailbox as an mbox file (a common file format for archiving e-mail) that you can store for safekeeping. Once you've created the archive and saved it to a secure place on your Mac, feel free to select all the messages in the smart mailbox and delete them. After deleting them, control-click on Mail's Trash icon and choose Erase Deleted Messages. To strip only attachments from messages, select everything in a mailbox and choose Message: Remove Attachments.

Microsoft Entourage 2004 (●●●●; macworld.com/3419) and 2008 (●●●●; macworld.com/3346) both lack a smart mailbox feature. However, you can do the job, using Custom Views (in Entourage 2004) or Saved Searches (in Entourage 2008). To gather old messages in Entourage 2004, choose File: New: Custom View. In the window that appears, name the view (Old E-mail, for example) and use the pop-up menus to configure the criteria to read `Date Received Is Greater Than 365 Days Old`. Click on OK. In Entourage 2008, choose File: New: Saved Search, click on the All Messages button to search all your mailboxes, configure the search

ILLUSTRATION BY JASON THARP; ICON BY PAUL HOWALT; PHOTOGRAPH COURTESY OF APPLE

criteria as above, and then click on Save. In the dialog box that appears, name your search and click on Save.

You'll see an entry for Old E-mail under the header Mail Views in Entourage's Folders list. Drag this item to the desktop to save the messages within a single mbox archive. (Depending on the number of messages you have, this might take a while.) Once you've archived the messages, you can select and delete them in Entourage. Then empty Entourage's Deleted Items folder by control-clicking on it and choosing Empty Deleted Items from the contextual menu.

If you just want to remove attachments from old messages, you can follow a similar path. Create the same custom view or saved search, but instead of deleting the messages, select them all and choose Message: Remove All Attachments. (For some other ways to speed up a lagging e-mail client, see "Fix Mac Slowdowns" at macworld.com/3420.)

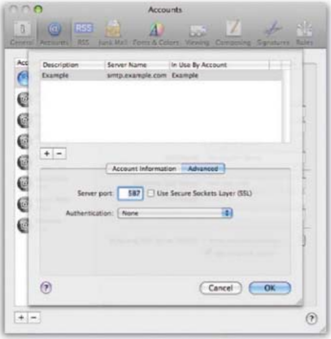
Send Messages When You're Out and About

If you've tried in vain to send e-mail messages through a café's or hotel's Internet connection, you understand that public access points can be picky about what they will and won't allow through. In particular, they routinely deny outgoing mail server (SMTP) connections to prevent the relaying of spam. You can tell that you have been denied when a message refuses to leave your e-mail client's outbox.

Public facilities often block SMTP port 25, the port (or network channel) most ISPs use to send e-mail messages. That means you can work around this problem by assigning an alternate port—usually port 587—to the SMTP server. To edit the SMTP port in the Leopard version of Apple's Mail, choose Mail: Preferences and click on the Accounts tab. Select an e-mail account from the list at the left of the window and make sure the Account Information tab to the right is selected. From the Outgoing Mail Server (SMTP) pop-up menu, choose Edit Server List. In the sheet that appears, select an SMTP server. Click on the Advanced tab at the bottom of the sheet. In the Server Port field, you'll likely see the number **25**. Change this to **587** and click on OK to dismiss the sheet (see "Unblock Outgoing Messages"). Finally, close the Mail Preferences window.

In Entourage 2004 and 2008, select Tools: Accounts and double-click on your preferred SMTP account in the Accounts window that appears. In the resulting Edit Account window, ensure that the Account Settings tab is selected and, in the Sending Mail section of the window, click on Click Here For Advanced Options. In the window that appears, type **587** in the Override Default SMTP Port field.

Note that some ISPs create an alternate port for the purposes of working around SMTP port blocking—Port 2525, for example. Check with your ISP to see if it does this and, if so, configure your SMTP settings accordingly.



Description	Server Name	In Use By Account
Example	smtp.example.com	Example

Server port: 587 ☐ Use Secure Sockets Layer (SSL)

Authentication: None

Unblock Outgoing Messages If a café's or hotel's router is blocking your outgoing e-mail messages, choose an SMTP port designed to work around blocked ports.

TRY THIS

Navigate Quick Look from Your Keyboard

Leopard's Quick Look is a great way to, well, get a quick look at the contents of a file—text and pictures in a PDF or the gist of an audio file, for example. People generally highlight an item, press the spacebar to invoke Quick Look, and then dismiss the Quick Look window. But you can keep Quick Look front and center while you navigate the current directory with either your keyboard or your mouse; new items you select in the Finder will display in the Quick Look window as you go. All standard Finder keyboard shortcuts still work, too.

PRESS THIS . . .	. . . TO DO THIS
arrow keys	Move left, right, up, or down in Index view.
left bracket ([)	Display the first item in the directory.
tab	Display the next item in alphabetical order.
shift-tab	Display the previous item in alphabetical order.
letter keys	Display the first item that begins with that letter.
⌘-1	Switch to Icon view.
⌘-2	Switch to List view.
⌘-3	Switch to Column view.
⌘-4	Switch to Cover Flow view.
⌘-up arrow	Move up through the folder hierarchy.
⌘-down arrow	Move down through the folder hierarchy.

Transfer Outlook Messages to Your Mac

You've made the switch to the Mac from Windows. You'd like your e-mail messages—currently entombed within your old PC's copy of Microsoft Outlook—to come along for the ride. Unfortunately, Outlook doesn't appear to offer an export option compatible with Mail or Entourage. What can you do?

The trick to exporting e-mail messages is to get that data into a form other e-mail clients can read. In this case, that format is our old friend, mbox. Regrettably, Outlook doesn't export its messages in this otherwise ubiquitous format, so you need to employ an intermediary e-mail client that can import Outlook messages and save those messages in an mbox archive. Mozilla's free Thunderbird 2 (macworld.com/0727) is that client.

You'll do the heavy lifting on the computer that's running Windows and Outlook. Download the Windows version of Thunderbird, launch it, and choose Tools: Import. In the Import window that appears, enable the Mail option and click on Next. In the subsequent window, select Outlook or Outlook Express (depending on which version you're using), and click on Next again. Thunderbird will import your Outlook mail.

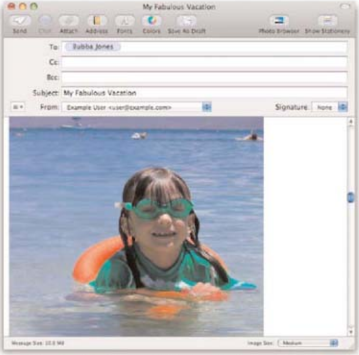
Now navigate to your user folder on the Windows machine and follow this path: \Application Data\Thunderbird\Profiles. You'll see a folder name made up of a hodgepodge of characters (g9mr6ux8.default, for example). Within this folder you'll follow this path: \Mail\Local Folders\Outlook Mail\Personal Folders.sbd. This folder contains the messages from your Outlook mailboxes—Inbox, Sent Items, and Junk E-mail, for example.

The trick to exporting e-mail messages is to get that data into a form other e-mail clients can read—in this case, it's mbox.

Those files *without* the *.msf* extension are the mbox files. Copy them to your Mac and use your e-mail client's Import command (found in the File menu in Entourage and Mail) to import them. Your client will create a mailbox for these messages and tell you its name.

Stop Running Out of Server Space

You may be proud that you've maintained the same e-mail address for over a decade, but out-of-date standards may be hampering that old POP e-mail account. Specifically, your ISP may offer very little e-mail storage and a skimpy transfer limit—as low as 10MB. The narrow gateway on such an account can cause problems—messages you send with large attachments will be refused passage, and anyone sending you similarly massive attachments will see their mail bounce right back with a "mailbox full" error (see "Send Big Files").



To: Bubba Jones

Cc:

Bcc:

Subject: My Fabulous Vacation

From: Example User <user@example.com>

Signature: None

Image Size: Medium

Send Big Files Tired of your old ISP gateway's rejection of today's massive e-mail messages? Keep your old address, but use a modern service with a much bigger transfer limit to configure your account to send messages.

The simplest solution is to get a different e-mail account. Apple's $99 per annum .Mac service (www.mac.com), Google's free Gmail (mail.google.com), and Yahoo's free Yahoo Mail (mail.yahoo.com) offer over 1GB of e-mail storage. But suppose all your friends know your old address and you're loath to make them switch? No worries. With one of these services, you can configure your old account so that it sends mail for your new address through the SMTP server while maintaining the same old return address. To set up that configuration, open the old e-mail account in Mail's or Entourage's Accounts area (in Mail, it's in Preferences; in Entourage, it's in the Tools menu). Then change the outgoing (SMTP) server to .Mac, Gmail, or Yahoo. Your recipients will see your old address as the sender. Unless they examine the message headers, they'll never know you sent your mail via a different service's SMTP server.

As for receiving mail, the old e-mail account's space limits still restrict you. However, you can make things easier by automatically deleting messages from the server once you've received them. In Leopard's Mail, go to Mail: Preferences, click on Accounts, choose a POP account, and then click on the Advanced tab. Here you can enable the Remove Copy From Server After Retrieving A Message option, and then choose Right Away from the Remove pop-up menu. In Entourage 2004 and 2008, choose Tools: Accounts, open a POP account, click on the Options tab, and make sure the Leave A Copy Of Each Message On The Server option is not selected.

Senior Editor **Christopher Breen** is the author of *The iPhone Pocket Guide* and *The iPod and iTunes Pocket Guide*, third edition (both Peachpit Press, 2007).

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Share Your Videos Online

Hosting sites are easy to use and often free **BY MICHAEL GOWAN**

Video is an extremely effective way to communicate with others—whether the video is a demo of your startup's new product, a video blog of your opinions on the latest iPod, or just footage from your daughter's birthday party for the grandparents who couldn't make the trip.

But how can you easily share your video with the world once it's ready? Even if you have your own Web site, those large files require lots of storage and bandwidth. So why not let someone else do the hard work for you?

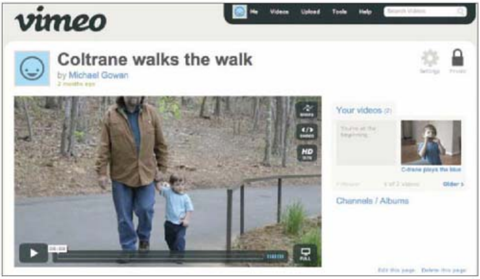
Sharing Is Good

Sharing your videos on sites such as YouTube offers more advantages than hosting your own videos (for a comparison of the different options, see "Video-Sharing Services").

Low Cost or Free Providing sufficient server space and bandwidth for every user who downloads large video files can be expensive. Most video-sharing sites pick up the entire tab, and even do the encoding work for you (saving you from having to buy video-encoding software).

Built-In Audience If you post a video to your own Web site, only people who already visit the site and those to whom you send the link might watch it. In comparison, many video-sharing sites will promote related videos together, so your video can catch the attention of people browsing. And most sites let viewers subscribe to your videos and receive an alert when you add a new one.

Compatibility A lot of video-sharing sites encode video in Flash format, which almost all Web browsers support by default. The primarily photo-oriented site SmugMug streams video in H.264 format, which iPhone and iPod touch users can access—expanding your reach that much further.



Vimeo For special options, such as 1,280-by-720 high definition video, you're limited to a few video-sharing sites, like Vimeo.

Worry-Free If your video suddenly becomes as popular as OK Go's "Here It Goes Again" (performed on treadmills), you don't want to be hosting that file on your own Web server. Heavy viewing greatly strains your site and can even bring the whole thing down—not to mention draw the ire of your ISP or Web hosting service. Even if you're not operating your own server, you can run into monthly bandwidth-usage limits. Video-sharing sites balance the load and handle the traffic for you.

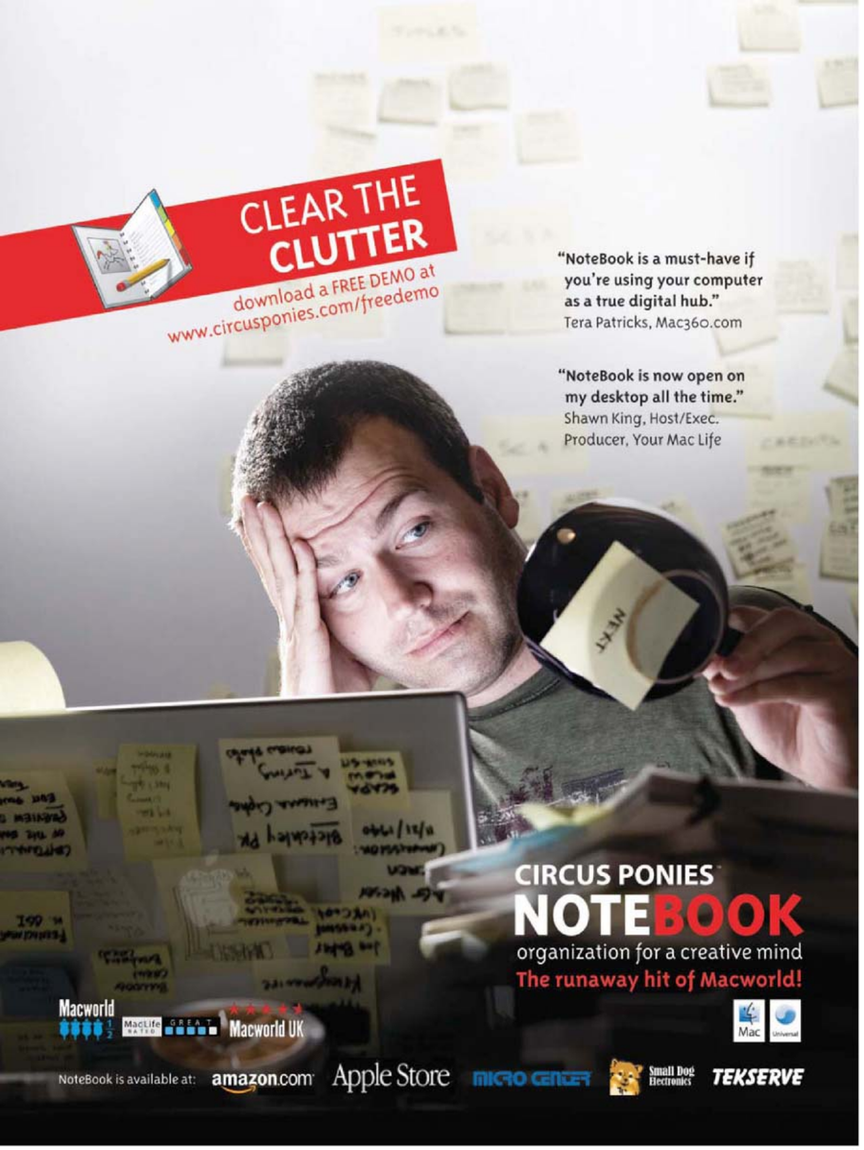
Drawbacks To get all these wonderful features, however, you must give up something—and that's usually control. Many video players from these sites are branded with the logo of the sharing site. And you never know what kind of related videos will be promoted on the same page as your video. Sites such as Vimeo offer a family-friendly viewing option, so an inappropriate link won't show up on your video's page. Still, your video may end up grouped with videos you don't want it to be associated with.

The features you get also vary greatly from site to site. Size restrictions are a big drawback on some sites. MySpace, Yahoo Video, YouTube, and others limit each file to 100MB, roughly ten minutes at 640-by-480-pixel resolution. Other sites such as Google Video and Vimeo impose no size limits. And some sites, such as blip.tv, aren't as tolerant of video commercials.

Playback quality also differs from site to site—YouTube plays all movies at 320 by 240 pixels, no matter what resolution you upload. Other sites, such as blip.tv, use 640 by 480, and some (SmugMug and Vimeo) even play back high definition files at resolutions as high as 1,280 by 720.

Learning to Share

All the sites I checked out make it easy to upload video via a Web-based tool; and some, such as Google Video and Veoh, have a desktop program that makes it faster to upload video—ideal



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when you're talking about very large files. Generally, as you upload a video, you give it a title, a description, and tags (keywords)—which the sites use for searches and to suggest your video to people watching similar videos. On many sites you can make a file private.

Encoding Once you've uploaded the video, the site encodes it into Flash or another format. This can take anywhere from five minutes to an hour for a short clip, depending on the site—longer clips take longer to encode.

Getting Found After encoding, the video is available for others to watch. People can stumble upon your video through a search or by browsing the page of related video, but in most cases you'll get the best exposure by sharing the video link through e-mail blasts and embedding the video on your site—follow the instructions on the site you choose if you want to embed files.

Who's Watching? To keep tabs on your video's popularity, sites track the number of times people view it. Some sites, like blip.tv, let you drill down further, showing views per day and how viewers came across your video.

Making Money The traffic you generate can earn you cash on some sites. YouTube, blip.tv, Revver, and others will tack ads onto your video if you choose, and then share the revenue with you. You'll need to get a lot of views to earn money, though. On Revver, the measly 24 views my video garnered didn't earn me a cent.

Other Options

If you're seeking an easy outlet for your videos, you may already have one in .Mac or iWeb. These two options work fine if all you want to do is send your friends a link to the video. But you'll miss out on the built-in audience on sites like YouTube, where thousands of people may see your clip and become fans. You'll also miss out on the ability to embed the video on other sites.

If your video suddenly becomes popular, you don't want to be hosting that file on your own Web server.

Recommended Sites

I determined that two sites provide the most for a variety of users: blip.tv and Vimeo.

For Small Businesses Blip.tv's powerful statistical tools and ad-revenue sharing options make it a natural fit for a small business that wants to add video to its site. The customizable, embedded player lets you remove much of the blip.tv branding, too. In addition, you can impose copyright restrictions on a video, choosing from a number of copyright options.

For Personal Use If you just need to post a video so you can send a link to your family or friends, you want the process to be free and easy. Vimeo nails both of those qualities, and offers a few extras as well. With its stylish design, the site makes your videos look even better. The site is excellent at keeping you posted on the progress of uploading. You can also designate your video as private, so random people won't chance upon it.

For Bloggers If you're looking to add video to your blog, you need an embedded player. The best one for you will depend on your tastes, really. If you use one of the big blogging sites to host your blog, you may already have such a player—Blogger has its own branded version of Google Video, for example. But if you want more control, blip.tv's embedded player lets you customize links and text that appear on the player, as well as colors, size, and more. And although Vimeo's player isn't as flexible, it makes adjusting size and color dead simple.

Elephant in the Room

Obviously you can't ignore YouTube if you're talking Web video, because it has something that the others can't match: lots of eyeballs. Luckily there's a service that makes choosing a single site irrelevant. With TubeMogul (www.tubemogul.com), you upload your video just once, to the service's site. You provide your login information for as many as 11 video-sharing sites—including Google Video, MySpace, and YouTube—and TubeMogul will submit your video to all the sites simultaneously. Once you get the hang of it, there's no better way to mass-distribute your video masterpiece. It's free for up to 150 submissions per month, and you can get more submissions and tools for a fee.

Video-Sharing Services

Service	URL	PRICE	MAXIMUM FILE SIZE OR LENGTH LIMIT	EMBEDDED PLAYER	ALLOWS HD
.Mac	www.mac.com	$99 per year	no limit	○	●
blip.tv	www.blip.tv	free	no limit	●	○
Google Video	video.google.com	free	no limit	●	○
MySpace	www.myspace.com	free	100MB	○	○
Revver	www.revver.com	free	100MB	●	○
SmugMug	www.smugmug.com	$60 (SD video) or $150 (HD video) per year	Power User account: 2.5 minutes; Professional account: 10 minutes for SD, 5 minutes for HD	○	●
Veoh	www.veoh.com	free	no limit	●	○
Vimeo	www.vimeo.com	free	no limit	●	●
Yahoo Video	video.yahoo.com	free	100MB	●	○
YouTube	www.youtube.com	free	100MB	●	○

● - yes. ○ - no.

Michael Gowan is a North Carolina-based writer who thinks video on the Web is superneat.

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Shredder's Tools

Hardware and software for the home guitar player **BY JIM DALRYMPLE**

Welcome to *Macworld*'s new *Recording Studio* column. In this space, we'll be writing about issues important to those of you who use Macs to create music and other kinds of audio content, whether you're a consummate professional or merely an inspired amateur. Quite a few of our writers and editors are also musicians; expect to see many of them appearing here over the next few months.

I've been writing about the Mac for over a decade, but I've also been playing guitar for more years than I care to admit. When it comes to making music, here are a few of my favorite tools.

The Hardware

Line 6's $130 Pocket Pod (line6.com/pocketpod) is one of the smallest, coolest little audio interfaces I've seen. I must admit, I chuckled a little when I opened the box: it's so small that I couldn't see how this thing could possibly give me a decent tone. The Pocket Pod includes over 300 presets, 32 classic and modern amp models, and 16 cab models. And it literally fits in the palm of your hand. It doesn't matter if you're an experienced guitarist or just starting out—this thing will help you beef up your sound, especially when you're just playing around.

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EFFECTS MID
DELAY TREBLE
CHAN VOL REVERB
SAVE HOLD FOR ALT FEATURES
TAP HOLD FOR TUNER

Pocket Pod

There are a lot of great amps out there, and one of my favorites is the $1,680 Peavey JSX Head (macworld.com/3491). The Peavey JSX is a three-channel amp. The Clean channel gives you controls for volume, bass, midtones, and treble, while the Crunch and Ultra channels have controls for gain and volume, and bass, midtones, and treble EQ, and include a Fat switch for boosting your sound even further. The amp also has a master volume control, which gives you a lot of leeway to crank up the channel volume to get the most out of the tubes.

Peavey JSX Head

I've plugged my guitar into an amp for as long as I've been playing. In the past, wireless systems seemed to take too much away from my tone, leaving it sounding empty. But Sennheiser's $849 ew 372 G2 wireless system (macworld.com/3492) has changed my mind. I played it through my amp, through the PA system, with plug-ins—every way that I could think of—and it held my tone no matter what I did. I was able to play two stories above it, and it never lost the connection, nor did the tone falter. I think I'm done with cables.

When it comes to mixing it all together, the mixer I've settled on is the $499 Yamaha MG166CX-USB (macworld.com/3493). It's compact, which is important for my studio; it has the inputs on the topside of the mixer, so I can plug things in easily; and I can plug it right into my Mac via USB. After I plugged it in, it responded right away, the controls were where I expected them to be, and it worked every time. (Those of you who have tried mixers know this isn't always the case.)

Line 6's $1,400 Variax 700 modeling guitar (line6.com/variax) is one of the coolest instruments I've run across. This finely crafted guitar can be configured to work with a Mac or simply plugged into an amp like any other guitar. There are 25 built-in guitar models, ranging from a 1960 Fender Telecaster Custom and a 1952 Gibson Les Paul Goldtop to a 1959 Martin D-28 and a 1935 Dobro Alumilite. And the Variax allows you to program alternative tunings that you can change on-the-fly while you're playing.

The Software

Apple's GarageBand (available as part of the $79 iLife suite; www.apple.com/ilife) is a great app, no doubt about it. But when you need to move up, where do you go? I have two digital audio workstations that I use regularly: Apple's $499 Logic Studio

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(www.apple.com/logicstudio) and Steinberg's $999 Cubase 4 Professional Edition (www.steinberg.net). Both are production-quality workstations and both have recently been updated with lots of new features. As with most software, your personal work habits will determine which program you like the most, but you can't go wrong with either one.

Some people out there can play almost any instrument you put in front of them. Unfortunately, I'm not one of those people. So when I'm recording, this shortcoming generally leaves me with the choice of using virtual instruments or music loops for my songs.

There are a lot of really good virtual instruments available for Mac users, but many of them are quite complicated. And added complexity can cramp your style when you want to just plug in and start playing. When I started using Cakewalk's $50 Studio Instruments (www.cakewalk.com), I was impressed not just by the instruments' realistic sound, but also by their ease of use. Unlike with many virtual instruments, you can just press a button and start playing, which is a great feature for those times when you don't want to lose your inspiration. The package includes a drum kit, a bass guitar, an electric piano, and a string section, all as separate plug-ins that work in GarageBand, Logic Studio, and other audio programs.

Variax 700

Music loops are AIFF (audio) files, also known as Apple Loops; these are audio files that include the appropriate metadata and transients. You can use them in apps like Apple's GarageBand and Logic Studio, Abelton's Live, Steinberg's Cubase, and more.

I'm picky when it comes to the loops I use. I hate hearing a song with a great-sounding guitar riff backed up with wimpy drums and bass. Through years of trial and error, I've discovered three solid sources for the best high-quality loops: Beta Monkey Music (betamonkeymusic.com), BandmateLoops (bandmateloops.com), and Big Fish Audio (bigfishaudio.com).

Professional drummer and Beta Monkey owner Chris Donlon records his drum loops in the studio, using a real drum kit. It's either Chris playing or another professional drummer he hires; either way it's a real person pounding on the skins. And you can tell the difference. When I run one of Chris's loops through my studio setup, it sounds like I have a real drummer sitting next to me.

But drums and guitars aren't the only instruments that make up a band. I've used lots of loops from BandmateLoops, ranging from bass guitar and electric piano to acoustic guitar and synths. (The loops also include an interesting collection of hip-hop and similar beats, if that's your style.)

Big Fish Audio is also one of my favorite sources for loops, thanks to the incredible breadth of its sound selections. You can find almost anything you want on the Big Fish Audio Web site, from Middle Eastern rhythms to Alien Guitars. That's not to say you can't also pick up some nice bass or drum loops from Big Fish Audio. I was particularly impressed with the L.A. Bass Sessions, recorded in the studio with well-known bassist Daniel Pearson.

Just because these three companies use real instruments, don't think that the loops are out of your price range. You can find loop packages on the sites at reasonable prices, generally in the $15 to $200 range. And the packages last: I'm still using loops I picked up three years ago. Some sounds simply don't go out of style.

Macworld.com News Director **Jim Dalrymple** is currently beginning work on recording his first album.

NEWS IN BRIEF

Yamaha Debuts New Synth, Tone Generator

Yamaha (www.yamaha.com) unveiled several new products at the Musikmesse trade show in Frankfurt, Germany. Available in June, the $1,500 Motif-Rack XS is a rack-mountable tone generator that includes 1,152 dynamic and authentic voices, 65 drum kits, and a synthesis engine for building custom voices. Yamaha also introduced a new synthesizer, the $1,300 MM8. The MM8 features quick-edit knobs and arpeggios for real-time control of those sounds, and it will ship in July.

Two New M-Audio Pianos

M-Audio (www.m-audio.com) has announced two new digital pianos equipped with built-in audio interfaces: the $450 ProKeys Sono 61 and the $550 ProKeys Sono 88. Each of the portable keyboards offers a variety of sounds that you can use to build songs with or without a computer. Both models feature sounds sampled from a Steinway grand piano. The ProKeys Sono 61 provides four other instant-access sounds—bright piano, electric piano, organ, and clavichord—while the ProKeys Sono 88 adds strings and choir, for a total of seven on-board instruments.

Steinberg's New FireWire Audio

Steinberg (www.steinberg.net) has announced two new FireWire audio interfaces that feature integration with the company's own Cubase digital audio workstation. The MR816 CSX and the MR816 X interfaces have eight discrete Class A analog preamps, with combination XLR and TRS analog inputs, advanced new inverted Darlington circuits, and switchable phantom power per channel. Both of these products will be available in the fall; pricing has not yet been announced.

"...if sound quality is high up on your list, you'll find a way to squeeze these bad boys onto your desktop."

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Essential Mobile Gear

Heading out on the road? Here's what I'd take. **BY DAN FRAKES**

For many people, laptops are just a way to take work down to the corner café. But for true road warriors, portable computing means bringing along all your computing essentials without having to schedule a visit to the chiropractor. As a *Macworld* editor, I'm often asked what I pack in my laptop bag; here's a look at the kinds of accessories that are on my must-have on-the-go list, along with some specific examples of them.

Portable Hard Drive

Just because your laptop is always with you doesn't mean you don't need a good backup. Thankfully, portable drives are smaller and lighter than ever. LaCie's $140, 5-ounce Little Disk Ⓐ (www.lacie.com), for example, offers 60GB of storage in an attractive USB 2.0 enclosure that's only 2.6 by 1.7 by 0.7 inches in size. Keep your backup drive separate from your laptop bag; if one is ever stolen, you'll still have the other.

Network Cable

Not all hotels and businesses have wireless Internet access. So a compact networking cable is a must. Zip-Linq's retractable cables ($15; www.ziplinq.com) work well and take up minimal space in your bag. If you've got a MacBook Air, you'll also need Apple's USB Ethernet Adapter ($29; store.apple.com).

Portable USB Hub

If you use more USB devices than you have ports for—we're looking at you, MacBook Air owners—you'll appreciate the utility of a compact USB hub. Dr. Bott's tiny T3Hub Ⓑ ($20; www.drbott.com) weighs only 21 grams but converts a single USB port into three. It can host two low-power USB devices and one high-power device.

Multi-Outlet Power Strip

If you're lucky, your hotel room will have a wall outlet so you can plug in your laptop's AC adapter. But what about all your other gadgets? Belkin's compact Mini Surge Protector with USB Charger Ⓒ ($25; www.belkin.com) turns a single outlet into three surge-protected versions; it also provides two ports for charging and powering gadgets via USB.

USB Power Cables

Instead of lugging a separate AC power adapter for each gadget, look for compatible USB power cables; you can then use a USB power adapter—such as the Belkin model noted above—or even your laptop's USB port(s) to charge your gear. For example, Apple's dock-connector cable lets you charge iPods and iPhones via USB, and many mobile phones have USB-charging accessories. Zip-Linq's Charge-n-Sync line (starting at $11; www.ziplinq.com) offers power supplies for many portable devices.

Wireless Detector

When you're looking for a place to get online, you could use OS X's AirPort menu, which shows you nearby wireless networks. But that means hauling out your laptop and waiting for AirPort to scan the area. A wireless-network detector can save you that hassle. Canary Wireless's new 2.5-ounce Digital Hotspotter HS-20 Ⓓ ($60; canarywireless.com/canary) quickly shows you the wireless networks in range, along with network type (802.11b, g, or n) and security status (open, WEP, WPA, or WPA2), for each.

Backup Battery

If power outlets are few and far between or you can't swap your laptop's battery for a fresh one, a portable power source can give you the extra time you need. Kensington's rechargeable Portable Power Pack for Mobile Devices Ⓔ ($60; us.kensington.com) is slim and lightweight (just 3.5 ounces)

PHOTOGRAPHS BY PETER BELANGER

The Portable Desktop

If you work at a desk when you travel—for example, in a hotel room or in someone else's office—you'll be much more comfortable and productive if you can set up an ergonomically sound workspace. Here are a few accessories that let you do exactly that:

A laptop stand raises your laptop's screen to the proper viewing height. Matias's $60 iFold ① (matias.ca) and LapWorks' $70 Aluminum Stand ② (www.laptopdesk.net) are good choices; the 2-pound iFold is sturdier and provides a better height, while the Aluminum Stand is lighter (at 21 ounces), thinner, and has a rotating base.

An external keyboard and mouse let you work with your arms and hands in ergonomic positions. Apple's $79 Wireless Keyboard ③ (www.apple.com) is perfect for carrying in a laptop bag, thanks to its superslim design and sturdy build; my favorite travel mouse is Logitech's $70 VX nano ④ (www.logitech.com), which has a thin profile and a unique free-spin scroll wheel. The VX nano isn't a Bluetooth device; to use it, you must connect an RF receiver to your Mac, but its receiver is the smallest on the market.

A case lets you carry it all: if you choose to bring along all these desktop trappings, WaterField Designs' $49 Travel Case ⑤ (www.sfbags.com) fits inside your normal bag and holds the Apple Wireless Keyboard, a travel mouse, a laptop power supply, and other small accessories.

and offers a longevity boost to small gadgets—for example, 5 more hours of iPhone talk time or 14 hours of additional iPod video playback—via a USB connection.

If you need to juice up your laptop, Duracell's PowerSource Mobile 100 Ⓕ ($140; duracellpower.com) is bulkier and heavier (1.2 pounds), but it features two USB power ports and a standard three-prong outlet for plugging in an AC power adapter. It can extend your laptop's use by about 2 hours, your mobile phone's talk time by 15 to 20 hours, or your iPod's audio playback by nearly 100 hours.

Finally, Battery Geek's External Laptop Batteries Ⓖ (www.batterygeek.net) use a custom MagSafe cable ($10) to provide three to six hours of additional usage for Apple's MacBook and MacBook Pro laptops. However, Battery Geek's batteries don't come cheap ($250 to $300), and they weigh two pounds.

G
Universal Lithium Battery Pack
E
Kensington
F
DURACELL

Security Cable

A hotel safe or a locked office is the safest place to keep your laptop. But if you must leave it in a less-secure location, a high-quality computer lock may offer enough of a deterrent so that a thief will move on to the next object of desire. PC Guardian's Ezolution models Ⓗ ($40 to $58; www.pcguardian.com) use seven-pin key locks or 10,000-combination numerical locks that offer better security than many competing products.

Return Tag

Give honest folks a chance to do the right thing by using a security label from StuffBak (www.stuffbak.com), TrackIt-Back (www.trackitback.com), or zReturn (www.zreturn.com). You put a uniquely numbered tag on your laptop, iPod, or other device and register that tag with the service—you can even designate a reward amount. Any Good Samaritan who finds the item can call the number on the tag to initiate the return process.

The Right Bag

If you travel frequently, consider using a rolling case instead of a backpack or shoulder bag. You'll be able to carry more—possibly even a change of clothes—without putting stress on your shoulders and back. Case Logic's new airline-friendly 18- and 22-inch Lightweight Upright Rollers Ⓘ ($150 to $180; www.caselogic.com) get their rigidity from panels of molded EVA plastic instead of metal frames, a design that reduces their weight while still protecting your belongings. Each Roller features dedicated laptop, organizer, and water-bottle compartments, as well as a separate main section for large items.

Senior Editor **Dan Frakes** runs the Mobile Mac blog on Macworld.com.

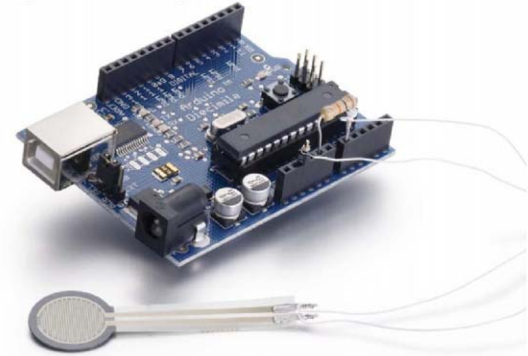
Control the World

Microcontrollers connect hobbyist hardware to your Mac **BY BRIAN JEPSON**

Your Mac can already talk to all kinds of electronic devices, including digital cameras, camcorders, printers, external disk drives, mobile phones, and other computers. But there are plenty of other gizmos that your Mac can't communicate with: motors, robots, external LCD displays, and sensors of all sorts.

For your Mac to talk to one of these items, it needs something to act as a translator. That's what microcontrollers do. Connect one of these programmable computers-on-a-board to your Mac's USB port, and you can then hook an external device to the board and program it to tell that device what to do.

To show you what's possible with microcontrollers and the Mac, I came up with a demonstration project that I call BreakTimer. This system enables your Mac to detect whether you're sitting in your chair and, if you've been sitting too long, to tell you it's time to get up and take a break.



Hardware Connections This is the hardware you'll be working with—the pressure sensor and a resistor connected to the Arduino board.

PHOTOGRAPH BY PETER BELANGER

Assemble the Components

There are three components to any microcontroller system for the Mac: the microcontroller board, its OS X software, and the hardware you're connecting to the microcontroller.

The most popular Mac-compatible microcontroller board is the Arduino. It's open source (you can get the schematics and build your own), it's very affordable ($35 for a fully assembled board), and it works wonderfully with Mac OS X. The board itself is available from several sources (see macworld.com/3479 for a list); make sure you get the newer Diecimila model.

Once you have the board, you need the software that goes with it: go to macworld.com/3480, click on the Mac OS X link, extract the file that downloads, and then drag the resulting folder to your Applications folder. Next, install the board's drivers. The most up-to-date driver software is available at macworld.com/3481; just make sure to get the right version for your particular Mac.

Connect the Hardware

Now, if you're trying my BreakTimer project, you're ready to connect the seat sensor to your Arduino board. Start by assembling the components detailed in "Shopping List." I've suggested some suppliers and part numbers, but you can source the hardware anywhere you like as long as it matches my description. Also, if you're not already familiar with the process of wire wrapping, check out an online tutorial at macworld.com/3482 or macworld.com/3483 before you start.

Once you've assembled your materials, cut two pieces of wrapping wire long enough to reach from your Mac to your chair. Using the wire stripper that comes with the wire-wrapping tool, strip about an inch from one end of each wire. Then, with the wire-wrapping tool, wrap one wire around each of the pins on the sensor.

Next, strip an inch from the other end of each wire. Using the wire-wrapping tool, wrap one of them to one lead of the resistor; wrap as high up on the lead as you can. With your cutters, detach a single pin from a row of male header pins. Wrap the end of the other wire to the short end of that pin.

Now it's time to hook it all together: Plug the end of the resistor that's connected to the sensor pin into the hole on the Arduino board labeled Analog In 0. Put the male header pin that's connected to the other sensor pin into the hole marked 5V. And the end of the resistor that isn't connected to any-

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thing goes into one of the two connectors marked Gnd. (Your board should look like the one shown in "Hardware Connections.") Make sure that the pieces of hardware in Gnd and 5V aren't touching, or you might get a short circuit.

Finally, connect the Arduino board to your Mac through any standard USB A-to-B cable; avoid using a USB hub.

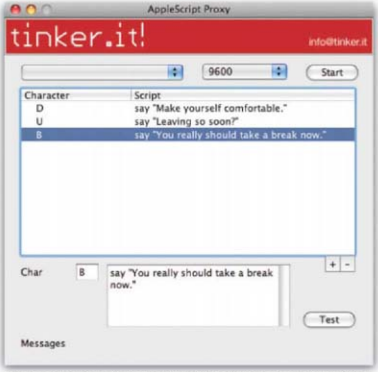
Program the Software

With the hardware connected, launch the Arduino application. Open the Tools menu and select your board from the Board submenu. Then open the Serial Port submenu and look for an entry that reads something like /dev/tty.usbserial-A4001LBP. If there's just one such entry, select it. If there's more than one, quit the Arduino program and unplug any nonessential USB gear. When you restart the application, you should see just one entry beginning with /dev/tty.usbserial.

Now you're ready to program the Arduino. The board uses a relatively straightforward programming language; if you've done any programming or scripting at all, you should be able to figure it out. (You'll find a good reference guide at macworld.com/3495.)

Shopping List

ITEM	SUPPLIER	PART NUMBER	PRICE
Diagonal cutters	RadioShack, www.radioshack.com	64-2951	$6
Five-pack of 10K resistors	RadioShack, www.radioshack.com	271-1126	$1
Male header pins	SparkFun Electronics, www.sparkfun.com	PRT-00116	$3
One ½-inch force-sensing resistor	Trossen Robotics, www.trossenrobotics.com	S-20-1000-FS5	$7
Wrapping wire	RadioShack, www.radioshack.com	278-502 or 278-503	$4
Wire-wrapping tool	RadioShack, www.radioshack.com	276-1570	$7



Character	Script
D	say "Make yourself comfortable."
U	say "Leaving so soon?"
B	say "You really should take a break now."

Char B say "You really should take a break now."

ASProxy at Work Using Massimo Banzi's free ASProxy, you can trigger simple AppleScript actions based on Arduino input.

For this demonstration, I wrote a program (a *sketch*, in Arduino argot) that uses the sensor to detect how long you've been sitting down.

Begin by choosing File: New in the Arduino software. A window should appear with a tab at the top. Click on the right-facing arrow in the upper right corner of that window, type a name (in my example, `BreakTimer`), and click on OK. Go to macworld.com/3486, copy the code you find there, and paste it into the code window.

Next, select File: Upload To I/O Board. Some lights on the Arduino board (labeled TX and RX) should flash. When the upload is complete, the output pane of the Arduino program should show something along these lines: "Binary sketch size: 3046 bytes (of a 14336 byte maximum)."

Now it's time to test your sensor. If you're attempting my BreakTimer project, click on Arduino's Serial Monitor icon and apply pressure to the sensor. A letter *D* should appear in the Arduino status window. When you release the pressure, you should see a *U*. Apply pressure for 15 minutes (you can adjust that to a shorter interval for testing purposes), and you should see a *B*. Click on the Serial Monitor icon again to stop monitoring these messages.

Now that the sensor is successfully communicating with your Mac through the Arduino board, you need to tell your Mac how to respond. One way is to use Massimo Banzi's free ASProxy (macworld.com/3477), which monitors your serial port for single-character messages and triggers AppleScript actions based on those messages (see "ASProxy at Work" for an example).

Or you can download the AppleScript add-in SerialPort X (macworld.com/3496). After copying it into *your user folder*/Library/Scripting Additions, you can use it to write an AppleScript in Script Editor that monitors your serial port for input and triggers specific actions. Just make sure to save the script as an application and select Stay Open. (See macworld.com/3486 for a downloadable example of such a script for BreakTimer.)

The Final Word

This project is just one demonstration of the many things you can do with a microcontroller connected to your Mac. The Arduino board can talk to all kinds of sensors and other devices available from places such as SparkFun Electronics (www.sparkfun.com) and Trossen Robotics (www.trossenrobotics.com). For more ideas, check out the Arduino site, particularly the Playground (macworld.com/3497) and Exhibition (macworld.com/3498) areas.

Brian Jepson is the executive editor for *Make* magazine's book series and the editor of *Making Things Talk* (Make Books, 2007).

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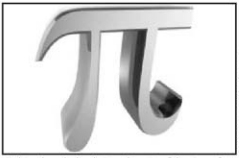
About Your Professor

Edward B. Burger is Professor of Mathematics in the Department of Mathematics and Statistics at Williams College. He earned a B.A. with distinction in Mathematics from Connecticut College (summa cum laude) and his Ph.D. in Mathematics from The University of Texas at Austin. He is the recipient of numerous honors, including the prestigious Chauvenet Prize presented by the Mathematical Association of America, and a variety of teaching awards.



Archimedes calculated pi, or the ratio of the circumference of a circle to its diameter, as 3.1418.

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Help Desk

Mac OS X Hints

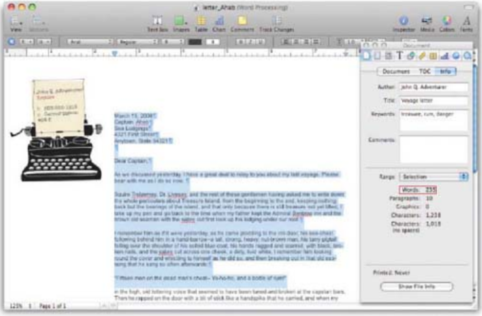
The insider tips you won't get from Apple **BY ROB GRIFFITHS**

Check Your Current Word Count

One of Microsoft Word's more useful features is a live word count (shown in the status bar at the bottom of the window). When you're editing a document, this count shows you exactly where you are in a document—for example, *354 of 1,253*. The first number represents the number of words above your cursor and the second shows the total number of words. This is helpful if you're working against a word-count limit.

Apple's Pages '08 (★★★½; macworld.com/3041), part of the $79 iWork '08 suite, also includes a word-count feature, but it's harder to use. To see Pages' word count, you must first open the Inspector (View: Show Inspector), select the Document section, and then click on the Info tab. Unfortunately, the word count you see here is only for the full document (or selection). It doesn't provide a count of words above the cursor's current position.

To work around this limitation, put the cursor at the point where you'd like to get a word count. With the Info tab of the Document Inspector visible, press shift-home (or ⌘-shift–up arrow on a laptop). This will select everything from the cursor position back to the beginning of the document. The Info panel will automatically change to show the word count in the selection, which represents the number of words above the cursor's position (see "Count Your Words").



Author: John Q. Adventurer
Title: Voyage letter
Keywords: treasure, rum, danger
Range: Selection
Words: 235
Paragraphs: 10
Graphics: 0
Characters: 1,238
Characters (no spaces): 1,018
Printed: Never

Count Your Words Pages lacks Word's built-in ability to count words from the beginning of the document. However, with just a couple of keyboard strokes, you can get the same results.

I HELPED THE
HELP
DESK

Have a hint to share?

Go to MacOSXHints.com to submit it. This column was based on tips from Mark Berry, Aldwin Chan, Mark Hunte, James Maclaurin, Alexis Polet, and anonymous contributors. Each month, the author of our favorite tip receives the *Help Desk* mug.

Easily Assign Programs to Spaces

One of the more time-consuming aspects of setting up Spaces in Mac OS X 10.5 (Leopard) is assigning programs to each space. Typically, you'd open the Exposé & Spaces preference pane, click on the Spaces tab, click on the plus-sign (+) button, navigate to the Applications folder in the window that appears, click on the program you'd like to add, and then click on Add. But if you have a lot of programs to add, this process quickly becomes tedious.

Instead of repeating all those steps for each program, try pressing and holding ⌘ as you click on each program in your Applications folder. *Then* click on Add to add them all to a given space. Better yet, skip this method altogether.

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The *Mac OS X Hints* Superguide has over 200 of the best tips and tricks for customizing, speeding up, and finding hidden features in OS X 10.5. To order the downloadable PDF, the CD, or the full-color printed book, go to macworld.com/superguide.

MUG PHOTOGRAPH BY PETER BELANGER; ICON BY PAUL HOWALT

Instead, open your Applications folder in the Finder and position the window where you can see it and the Spaces window at the same time. Select a number of programs in the Finder—pressing shift to select consecutive or ⌘ to select nonconsecutive ones—and then drag and drop them directly onto the visual thumbnail of the space to which you'd like to assign them (see "Assign Spaces").

Copy Files from Preview's Sidebar

In Mac OS X 10.4 (Tiger) and earlier, if you dragged an image out of the sidebar in Apple's Preview, it would vanish in a puff of smoke. However, this was basically a meaningless action—nothing would actually happen to the file. But as of Leopard, Preview's sidebar images are connected to the source files. When you drag a thumbnail from Preview's sidebar to a folder in the Finder, you'll create a copy. This new behavior can be a time-saver—for instance, you can use Preview to scan a number of images and sort them into Keep and Recycle bins. Directly from the sidebar, just drag the images you want to keep into your Keep folder, and you can do all your reviewing and sorting directly from Preview.

POWER TIP OF THE MONTH

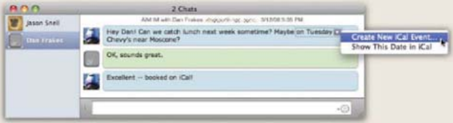
Enable Data Detectors in iChat

As you type, Leopard's Mail looks for words that might indicate a meeting, an address, or a phone number, and calls them out with an outline box and a drop-down arrow when you mouse over them. Click on the drop-down arrow and a contextual menu lets you perform actions such as creating a new contact from the information, adding the information to an existing contact, showing a map of an address, or creating appointments. You might wonder why iChat doesn't also use this feature. Truth is, you can enable it yourself. First quit iChat if it's running, launch Terminal (/Applications/Utilities), and enter this command (copy and paste it from macworld.com/3472):

```
defaults write com.apple.iChat EnableDataDetectors 1
```

Now launch iChat, start a chat with a buddy, and type something like `How about lunch tomorrow?` Mouse over that text, and you should see the familiar outline box and drop-down arrow that will let you easily add the event to iCal.

If Data Detectors stop working in iChat, change the display settings for iChat messages and then change them back. If you'd rather wait for Apple to work out the kinks, disable Data Detectors by first quitting iChat. Then return to Terminal and repeat the above command, but change the **1** at the end to a **0**. Relaunch iChat, and things will be back to normal.



Hey Dan! Can we catch lunch next week sometime? Maybe on Tuesday
Chevy's near Moscone?

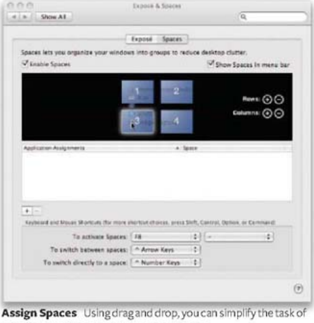
OK, sounds great.

Excellent -- booked on iCal!

Detect Data in iChat If you like the convenience of using Leopard's Data Detectors in Mail, consider turning them on in iChat too.

Use Data from Quick Look Windows

Often I just want to glance at a file to find a tidbit of information, and Leopard's Quick Look saves lots of time by letting me see a file's contents without actually opening the file. One thing about Quick Look, though, is that its window is visible only in the Finder—as soon as you switch to another program, the window vanishes. This makes it rather tricky to use information from Quick Look in other programs.



Spaces lets you organize your windows into groups to reduce desktop clutter.

☑ Enable Spaces

☑ Show Spaces in menu bar

Keyboard and Mouse Shortcuts (for more shortcut choices, press Shift, Control, Option, or Command)

To activate Spaces: F8

To switch between spaces: ^ Arrow Keys

To switch directly to a space: ^ Number Keys

Assign Spaces Using drag and drop, you can simplify the task of assigning multiple programs to a given space.

If you don't want to resort to opening the file in its parent application, one quick-and-dirty workaround is to press ⌘-shift-control-4 while in the Finder. This copies a *screenshot* of the Quick Look window onto the Clipboard; you can then paste that image into your target program. If the destination program doesn't accept images (if it's a text editor, for instance), press Preview into service. Use its File: New From Clipboard command to display the image quickly. Preview won't vanish when you switch to the other program, so you'll still have access to the data you need.

Fast Math with Quick Look Data

In one particular case, there's a more elegant way to solve the problem of using data from Quick Look. Say you're peeking at a spreadsheet, and you just need to run a calculation on some of its numbers. If you launch Apple's Calculator (/Applications), of course, the Quick Look window vanishes. You could use the calculator widget on the Dashboard (by pressing F12), but that's not a true calculator. It actually works more like a limited adding machine, displaying results as soon as there's enough data to calculate an answer. (As a quick example, try this calculation in both Calculator and the Dashboard widget: `2 + 2 * 3`. In math, multiplication always comes first, so the correct answer is **8**. Dashboard's calculator will instead display **12**.)

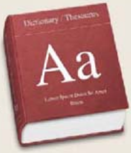
In Leopard, though, you've got a third hidden calculator that when activated won't make the Quick Look window vanish: Spotlight. Spotlight's ability to perform calculations means that you can use it *while* viewing the spreadsheet in Quick Look. Just activate Spotlight (⌘-spacebar), and then type your equation (see "Quick Look Math"). As you type, Spotlight constantly calculates the answer, but it's smart enough to handle our sample case correctly. When you first type **2+2**, you'll see Spotlight showing **4** as the result. But as soon as you press the ***** key for multiplication, that answer disappears. Type **3**, and Spotlight will display the proper answer, **8**.

Print to Mac-Connected Printers from Windows

Say you have a printer connected to your Mac that you need to print to from Windows running either on a dedicated PC or through a virtual system operating under the $80 VMware Fusion (★★★★; macworld.com/3116) or the $80 Parallels Desktop 3 (★★★★; macworld.com/2930). One of the simplest ways to do this—if the printer is Bonjour-capable—is to install Apple's free Bonjour for Windows utility on the PC side and then use Apple's networking technology to connect to the printer (see macworld.com/3471 for details). But what if you don't have a Bonjour-capable printer? You can still use Bonjour to get the job done; you just need to combine it with one additional Apple technology—printer sharing.

OS X 101

Dive into Leopard's Dictionary



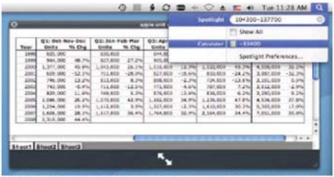
Mac OS X's built-in dictionary and thesaurus make it easy to look up words in many programs. In Apple's TextEdit or Mail, for instance, just control-click on a word and choose Look Up In Dictionary from the contextual menu. But Leopard added a few new tricks to the Dictionary program (/Applications). Here's a tour.

Technical Assistance Say a program's Read Me file natters on about *Bonjour*. Now you can use Leopard's built-in technical dictionary to find out exactly what the term means. Just control-click on the word and choose Look Up In Dictionary, and you'll soon see Apple's definition. (*Bonjour* is a networking technology.)

Community Encyclopedia But that's not all. Dictionary also includes a connection to the community-created Wikipedia encyclopedia, which contains over 2.2 million entries. Want to know more about the technology behind your Ethernet network? Look up *Ethernet* in Dictionary, and you'll see the entire contents of Wikipedia's entry on the subject, complete with illustrations, right there in the Dictionary window.

Reference Desk Finally, Apple has added a ton of reference material to Dictionary. Launch the program, click on the Dictionary button, and then select Go: Front/Back Matter. The front and back matter of the New Oxford American Dictionary contain a ton of information. On the useful side is a list of all U.S. presidents; a chemical elements chart; standard weights and measures; countries of the world; and a language guide complete with advice on spelling, grammar, and punctuation. There's even a list of clichés to avoid. When using these tools, remember that *everything* in Dictionary is a link.

Customize Your View If you like, you can customize the names Dictionary uses for its resources, which is helpful if you find the label *Apple* or *Wikipedia* unclear. To do so, control-click on one of the labels (for instance, *Apple*) and select Edit Label from the pop-up menu. Type a new name—say, `Technical Dictionary`—and then click on OK. Feel free to use whatever names suit your fancy, but keep in mind that longer names will make for a wider window.



Quick Look Math Quick Look windows vanish when you click in another program, making it hard to use their data. But if you just need to do a bit of math, Spotlight's new calculation abilities let you work around this problem.

Launch System Preferences and go to the Sharing pane. On that pane, select the Printer Sharing option, and (if you have more than one locally connected printer) select the specific printer you'd like to share. Switch to your virtual or real Windows machine, and then download and install the Bonjour for Windows utility. You'll find a new Bonjour Printer Wizard on your Windows desktop. Launch it, and then click on Next to get to the Browse For Bonjour Printers screen. In the Shared Printers section of this screen, you should see your shared Mac-connected printer. Select it, and then click on Next.

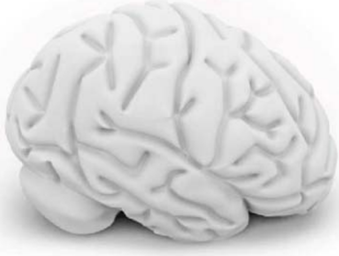
On the Install Bonjour Printer screen, you'll probably see the Manufacturer as Generic and the Model as either Generic/PostScript or Generic/PCL. Choose Generic/PostScript first—if that doesn't work, you can try the PCL option. If you want this to be your default printer, select that option, and then click on Next. Click on Finish. You're in business.

Keep in mind that you won't get the same full-featured Print dialog box that you'd get if you had the printer's native print driver installed. However, I had no trouble printing basic text and images from Windows. ☒

Senior Editor **Rob Griffiths** runs the MacOSXHints.com Web site.

ICON BY PAUL HOWALT

Your email program does not have one of these:



Ours does.

Imagine an email program that was smart enough to observe and learn how you handle your email. Like offering to reply to certain types of email messages using a response you've previously sent. Or giving you the option to auto-file a message you've read based on how you've filed similar messages in the past. What if you could defer a message from your inbox for a few days or weeks, so that it magically reappears later when you're ready to deal with it? What if this program had an amazing junk mail filter that would leave your inbox devoid of spam? What if this program was as familiar and easy to use as Apple Mail?

After three years in development, we've finally created that program. Outspring Mail is the newest email client for Macintosh. We've taken the best features of existing email programs and coupled them with our patent-pending intelligent functions to create a program that will make your email chores far easier. And since this is a current-generation application, it supports major email protocols including POP, IMAP, SMTP and SSL. It also runs natively on the latest Macintosh computers and OS X Leopard. But don't just take our word for it. Check out the details at www.outspring.com.

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Mac 911

Solutions to your most vexing Mac problems **BY CHRISTOPHER BREEN**

Spiff Up Cover Flow Images

Q: I download video podcasts and can't help but notice that many of their images don't look very good when displayed in Cover Flow view. Is there a way to force Cover Flow to show a better-looking frame from the podcast?

Kevin Taylor

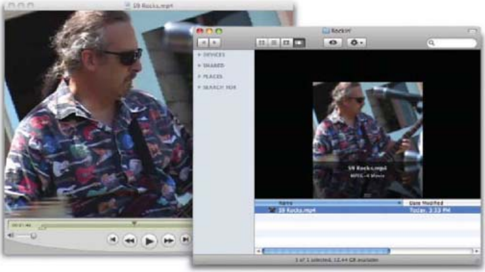
A: Open your video in QuickTime Player (/Applications) and find a frame you like. Press ⌘-C to copy that frame to the Clipboard. Now locate the movie file in the Finder and press ⌘-I to call up the Info window. Click on the movie icon in the upper left corner and press ⌘-V to paste in the frame you copied. Select the movie in the Finder and ogle the improved results in Cover Flow view (see "Custom Cover Flow Images"). Note that if you expand the Cover Flow window, your preview icon will likely appear pixelated.

Cure a Forgetful Firewall

Q: I want to turn on my Power Mac G5's firewall, but whenever I go to Mac OS X 10.4's Sharing preference pane, the option to turn on the firewall is disabled. When I unlock the option with my administrator password, I see a drop-down menu that reads, "Other firewall software is running on your computer. To change the Apple firewall settings, turn off the other firewall software." I have no idea what the "other firewall software" is.

Mike Williams

Have a problem? Go to the Mac 911 forum (macworld.com/2467) for help with your misbehaving Mac or applications.



Custom Cover Flow Images Don't like the image you see for a file in Cover Flow view? If it's a movie, it's easy to use a better-looking frame.

A: Unless you've installed a firewall program in the past and have since forgotten that you've done so, your Mac is definitely confused. In such a case, first try restarting your computer. If that doesn't fix the problem, you'll need to clear the firewall settings.

To do so, launch Terminal (/Applications/Utilities) and type this series of commands to flush your firewall settings (alternatively, you can copy and paste all these commands from macworld.com/3357):

```
sudo /sbin/ipfw flush
```

You'll be prompted for your administrator password. Enter it and confirm by typing `Y` that you really do want to flush the settings. Now enter the following command to reload the firewall settings from the firewall's preferences (the following should appear all on one line, without any hyphens):

```
sudo /System/Library/PrivateFrameworks/NetworkConfig.framework/Versions/A/Resources/firewalltool
```

You should now be able to switch on your firewall from the Sharing preference pane.

Edit iWork Templates

Q: I created a bunch of templates in Apple's iWork '08, but now I need to modify or delete some of them. How do I do this?

Via the Internet

A: To modify a Pages or Numbers '08 template, open the template, edit it as you like, and then choose File: Save As Template. When the Save sheet appears, enter the same name as the original template and click on Save. You'll be asked if you'd like to replace the current version with the new version. Choose Replace. When you next open the template, it will contain all the changes you made.

To delete a template, look inside the *your user folder*/Library/Application Support/iWork folder. The Pages and Numbers folders in here each contain a

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○ a
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TOOLS OF THE TRADE

Enhance Your iPhone

ICON BY PAUL HOWALT; IPHONE PHOTOGRAPH COURTESY OF APPLE

Apple's iPhone is a wonderful hunk of technology, but it's not completely perfect. Thankfully, many of its shortcomings can be cured with these add-ons.

Ecamm Network's MegaPhone ($20; www.ecamm.com) lets you use your iPhone like a hard drive. Just install MegaPhone on any Mac on which you wish to use the iPhone for storage, launch the program, and marvel when you find that you can drag files to the iPhone via the MegaPhone interface. In addition, you can use MegaPhone to copy music from the iPhone to your Mac, view and export SMS messages and iCal History files, and edit and create Notes files. MegaPhone works with the iPod touch, too.

Spanning Sync ($25-per-year subscription or $65 purchase; www.spanningsync.com) can get the calendar events that you keep on multiple Macs and iPhones in sync. The program allows you to synchronize iCal calendars with Google Calendars and vice versa. The trick is to create a master Google calendar for all your events and then use Spanning Sync to sync your Macs to it. Once your iCal calendars are up-to-date, you can sync the iPhone's calendar to them and it, too, will be brought up-to-date. By the time you read this, Busy Mac's BusySync 2.0 ($20 per computer; www.busysync.com) will support this same kind of iCal–Google Calendar syncing.

A Gmail IMAP account will help keep your iPhone from becoming overwhelmed by junk mail despite the fact that the iPhone's Mail program doesn't include spam filtering. Gmail is free, it includes excellent spam filtering, and it allows you to forward messages from other accounts. Gmail IMAP accounts show the same collection of messages on your iPhone as on your Mac. To create an IMAP account in Gmail, on your Mac go to mail.google.com, create an account, click on the Settings link, click on the Forwarding and POP/IMAP tab, select the Enable IMAP option, and click on Save Changes. On the iPhone, tap on Settings: Mail: Add Account. On the screen that appears, tap on Gmail and, on the sheet that appears, enter your Gmail settings and tap on Save.

Templates folder in which you'll find a My Templates folder. Navigate to either of these folders to find the template files you want to delete. When you do, toss the files in the Trash. You'll no longer see those templates listed when you select the My Templates entry in the Template Chooser sheet.

Adjust TextEdit Margins

Q: Regardless of how hard I try, I am unable to modify margins in TextEdit. It's easy enough to use the Format: Wrap To Window command to eliminate the default margins on the screen. But when I use ⌘-P to print and choose the Preview option, the margins are still there. I have no idea how to eliminate them.

Guy Parro

A: If you have any version of Microsoft Word (www.microsoft.com/mac), a copy of the open source project NeoOffice (free; www.neooffice.org), or just about any other text editor that supports RTF (Rich Text Format), you can use this file format to whip TextEdit into shape. Create a document with the margins you like in the other text-editing program, save the document as an RTF file, and then open it in TextEdit. TextEdit will respect the margins created in the other program. Use this RTF file as a template for other TextEdit documents.

Put iCal on the 24-Hour Clock

Q: Every other program on my MacBook seems to be able to handle a 24-hour clock except Apple's iCal. (I'm using the Mac OS X 10.5 version.) When I create an iCal event, I see only the option to use AM or PM. Is there any fix for this?

Graham Hibbard

A: Open System Preferences (/Applications) and click on International. Click on the Formats tab and click on Customize in the Times portion of the window. In the sheet that appears, you'll see the current time (in 12-hour format) underneath the header Show. Click on the hour and, in the menu that appears, select 1–24. To prevent *AM* and *PM* from showing, you can either delete the contents of the Before Noon and After Noon fields in this window or, in the field where the time is displayed, select AM or PM and press the delete key.

When you have things configured to your satisfaction, click on OK to dismiss the sheet. Quit iCal if it's running. When you next launch it, you'll see your events displayed in the 24-hour format. Should you wish to return to the U.S. default 12-hour format, open the International preference pane again and click on the Formats tab. All you need to do is choose United States from the Region pop-up menu.

Delete .Mac Web Gallery Assets

Q: How do I delete photos and movies from my .Mac Web Gallery? I still have a movie on My Gallery that I clearly deleted from My Projects in iMovie.

Via the Internet

A: If you've changed your mind about those movies you posted to Apple's .Mac service ($100 per year; www.mac.com), normally you'd select the project in iMovie (/Applications) and choose Share: Remove From .Mac to delete them. Likewise, to remove photographs you've posted, you'd click on the Gallery in iPhoto's Web Gallery area, delete the images, and republish the gallery without them.

But what if the usual methods don't do the job? In that case, you're welcome to lift the hood and start ripping out the parts you don't want. In the Finder, choose Go: iDisk: My iDisk. When your iDisk mounts on the Desktop, navigate to *your .Mac user name*/Web/Sites and locate the _gallery folder within the Sites folder. Inside this folder, you'll find at least one folder that bears a six-digit number—100076, for example (see "Locating Gallery Images"). This number

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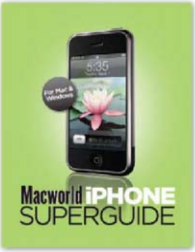
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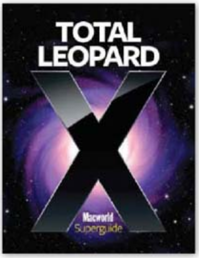
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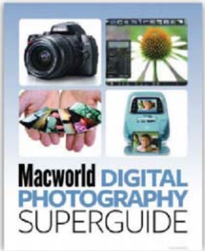
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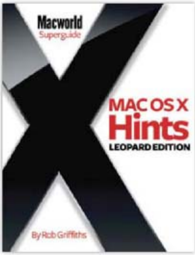
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LEOPARD EDITION
By Rob Griffiths

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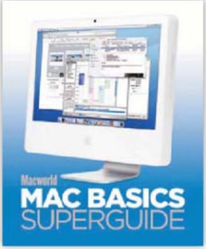
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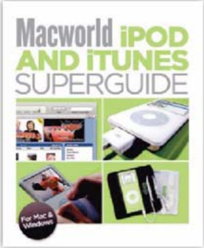
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corresponds to the numerical ID your Mac assigned to your Web Gallery (that number appears in the gallery's URL). To delete an entire Web Gallery, locate the folder that corresponds to it and drag it to the Trash. When you next look at your My Gallery page, that gallery should be gone.

You can also use this method to delete individual pictures and movies. To do so, open the six-digit folder and you'll see folders that bear the names of your images or movie files that correspond to the movies you published from iMovie. Locate the item whose name belongs to the image or movie you want to delete, and drag it to the Trash.

Un-Mute Your iPhone

Q: When I make a call on my iPhone, I can't hear a word anyone on the end of the line is saying. What's wrong?

Ben Donnelly

A: The root of the problem is the iPhone's belief that its headset is plugged in—because of this, it cuts off sound to the receiver port at the top of the phone. Try plugging the headset or set of headphones into the appropriate port and then unplugging them a time or two. This generally clears things up in a jiffy. If it doesn't, you may want to try Alan Luckow's swab-and-window-cleaner method, demonstrated at macworld.com/3438. Note that his solution looks safe enough, but Apple's warranty department may feel differently.

Find a Browser for an Old Mac

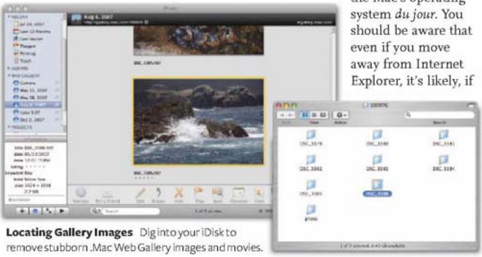
Q: I have an old Mac running Mac OS 9.1. Some of the Web sites I visit don't work with Internet Explorer, and friends have suggested I use Mozilla Firefox. I'm unable to do that because of the computer's age. What can I do?

Danella Carter

A: Web standards have changed quite a bit since Mac OS 9 was the Mac's operating system *du jour*. You should be aware that even if you move away from Internet Explorer, it's likely, if not assured, that there still will be Web sites that won't work on your Mac. With that warning in mind, here's where to find a few browsers that work with Mac OS 9.

The first, WaMCom (wamcom.org) is a free, open-source browser and e-mail program based on old Mozilla code. That old code may provide whatever compatibility you find lacking in Explorer. Another option is Alexander Clauss's $25 iCab (www.icab.de). On the download page, you'll find several versions that work with Macs running operating systems as far back as Mac OS 7.5. (I'd recommend iCab 3.0.5 for you.) Finally, you can give the old, and free, Netscape Navigator 7.0.2 (macworld.com/3439) a try.

Senior Editor **Christopher Breen** is the author of *The iPhone Pocket Guide* and *The iPod and iTunes Pocket Guide*, third edition (both Peachpit Press, 2007).



Locating Gallery Images Dig into your iDisk to remove stubborn .Mac Web Gallery images and movies.

Bugs & Fixes

BY TED LANDAU

Missing First Letter Typed On February 19, Apple released the MacBook, MacBook Pro Keyboard Firmware Update 1.0 (macworld.com/3441) to fix a problem in which a Mac that has been idle for a while ignores the first key you press. Unfortunately, this is just a partial fix, because you must be running Mac OS X 10.5.2 or later to install the update (which means that people still running Tiger are left out). Also, this same symptom has been reported in Mac models, especially PowerBook G4s, not covered by the update.

Missing iCal Events After installing the Mac OS X 10.5.2 update, you may notice that some of your Apple iCal events no longer appear. If so, try this simple solution. Quit Apple's iCal and (if it's running) Mail. Next, go to the *your user folder*/Library/Calendars folder and delete the Calendar Cache file. After that, all should be well.

Duplicate iPhone Ringtones After you sync a bunch of ringtones to your iPhone, you may find yourself with duplicate listings of the first custom tone, rather than all your different tones. This is due to a bug in Apple's iTunes 7.6 and happens if you've selected both the Sync Ringtones option in the iPhone's Ringtones tab *and* the Manually Manage Music And Videos option in the iPhone Summary tab. The workaround is to choose only one of these options.

iPhone E-mail Messages Won't Send Some iPhone users and iPod touch users may find that they occasionally can't send an e-mail message, even though they're receiving messages just fine. If you accidentally dragged the message from your Inbox to your Outbox, the iPhone will show an error. But you can't necessarily take the offending message out of the Outbox, because it may become invisible. To make it reappear, you must temporarily turn off the iPhone's Airplane mode or turn off the iPod touch's Wi-Fi.

Senior Contributor **Ted Landau** is the founder of MacFixIt (www.macfixit.com) and the author of *Take Control of Troubleshooting Your iPhone* (TidBits Publishing, 2007). Share your problems at bugs@macworld.com or on Macworld.com's Mac 911 forum.

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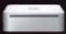

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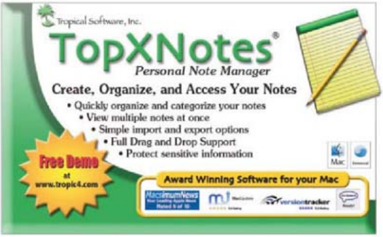

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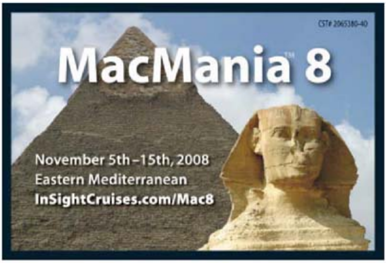

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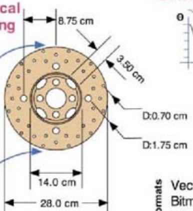

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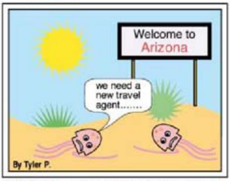
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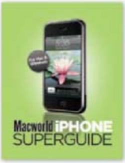
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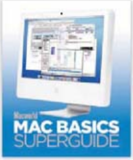
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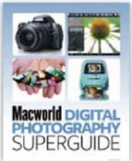
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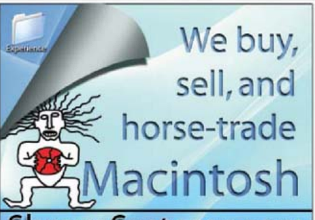

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The End of the World

Why Apple doomsayers are full of hooey

Apparently some of you think that Apple's about to go out of business; that its very existence is threatened; that fire, plague, and pestilence lie just around the corner for our favorite fruit-themed computer and consumer-electronics company. To which I say: What fight are you watching?

Let Them Eat Cake

It may have started last summer, when there was much hand-wringing over the delay of Leopard. "Apple can't scale to meet demand!" people moaned. One missed deadline and suddenly every Mac user is an operations-management expert.

Then some of you were disappointed that Apple didn't follow up the iPhone with something equally game-changing—like a tablet PC. Or one of those $100 laptops. Or an even *cooler* iPhone with, um, lasers. Or maybe jet packs.

And while we're at it, Apple never *explicitly* promised you free cake, but you really, really like free cake. So, Steve Jobs, where's the free cake? Huh? Where? Is? The? Free? Cake?

What's Apple done for you lately? The MacBook Air. Are you really going to throw your money away on a supposedly revolutionary laptop that at first glance appears to exist in only two dimensions? So what if it fits in an envelope? Does it smite your enemies? Where's the smiting?

Then it was the iPhone software-development kit. When the iPhone was first released, everyone was all, "Oh, it will never sell without third-party programs." (Of course, Apple sold millions of them.) But then—perhaps so he could sell millions more—Steve Jobs released an SDK. "Here!" he should have said. "Here's your darn SDK! Now get off my lawn!"

But did you get off Steve's lawn? No, you did not. You complained about the 30 percent take Apple was going to skim off the top of all iPhone software sales, about the fact that we'd be able to get programs only from the official iPhone App Store, about the noticeable absence of free cake.

Magical Fairy Pony Princess

What is the matter with you people?

Seriously. Because despite the recent decline in the company's stock price[A], things at Apple have rarely been better. The iPod and iTunes still dominate the digital music world. Sales of the iPhone are strong, and the iPhone SDK will revolutionize the platform. Mac sales continue to climb. Leopard received rave reviews. The company has more cash than Oprah when her monthly Amazon referral check clears.

Apple never explicitly promised you free cake. But you really, really like free cake.

It's not like Apple's the only company to see its stock go south this year. And some people *did* think Apple could churn out an iPhone-level product every year. I like to call those people "magical fairy pony princess" investors. They're not looking for a stock as much as they're looking for an imaginary best friend with pockets full of cash. When Apple turned out not to be that friend, those investors went looking elsewhere. I say good riddance to them[B].

I'm going to type these next words very slowly so even they can understand: Despite the substantial drop in the company's share price, and despite what you may have read on the bathroom wall, things are very good right now for Apple. The only reason to doubt that Apple will continue to do well is if you think Jobs and company are plumb out of ideas. After 30 years, do you really think the hitters at Apple are ready for retirement, just because they aren't hitting a homer with every at bat? Besides, given the almost weekly release schedule the company has been following lately, Apple is clearly hitting for average these days. I'll take a solid double anytime.

The iPod and the iPhone not only have been hits in and of themselves, but they've also encouraged more Mac sales. Which, in turn, encourages more iPod and iPhone sales. It's almost as if the company has defied the laws of thermodynamics and created a perpetual-motion machine. The question is, are you going to be on the perpetual motion machine or are you going to step off and watch it roll on into the distance?

Me? I'm going to just sit back and enjoy the ride. I might even have some cake.

John Moltz used to write the Crazy Apple Rumors blog. His next project will be something involving jet packs.

PHOTOGRAPH BY PETER BELANGER

[A] I'm writing this in March. For all I know, Apple's stock price will be higher than Google's by the time this column is published. And in the spirit of full disclosure: I own two whole shares of Apple. [B] The author's views are not necessarily those of Apple's finance department, senior management, or board. In fact, I'm pretty sure they're not.

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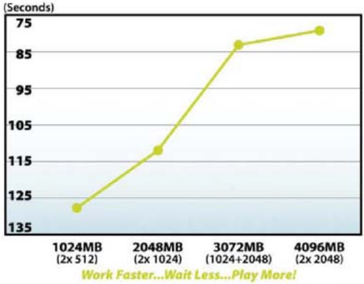

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